THE IRON TRADE REVIEW

Volume L CLEVELAND, APRIL 11, 1912 Number 15

Great Production of the Steel Corporation

And Increasing Output of Independent Companies—
Heavy Sales of Pig Iron and Many Inquiries Pending

The United States Steel Corporation is operating this week at the highest productive rate in its history. Last month it operated at a rate exceeding 16,000,000 tons of ingots per annum, or about 2,000,000 tons in excess of its record for a year's output. It is putting on steel-making capacity wherever it can and has practically no idle open-hearth capacity. While leading independent companies are not as actively engaged as the Steel Corporation, some of them are showing substantial gains. This is particularly true in the east, where mills are now operating at about 85 per cent of full capacity. The Lukens Iron & Steel Co. is among those which have increased their output rapidly during the past week. The Alan Wood Iron & Steel Co. has put on another open-hearth furnace, making seven out of nine in operation, and is about to blow in its large blast furnace. One large eastern concern reports that during the last week it received almost a record number of orders, though many of them were small.

Iron Ore

The sales of lake ore during the past week have been very heavy and from 8,000,000 to 10,000,000 tons have been placed, including allotments made by selling agencies to allied and subsidiary companies. Considerable interest is felt in the ore unloading charge and ore men are protesting against the plan to make the rate 10 cents, a reduction of only 5 cents compared with last year. The rate on ore from the head of the lakes to lower lake ports seems to be pretty well established at 40 cents, net. More lake ore has been sold for eastern delivery than for a number of years, and it is expected that about 1,000,000 tons will be shipped to that section.

Pig Iron

The pig iron market shows increased activity and some hardening of prices. In eastern territory, inquiries for from 30,000 to 40,000 tons of steel-making irons are pending. A central Pennsylvania consumer has closed for 4,000 tons of basic for prompt delivery at $15, delivered, an advance of 50 cents from recent quotations. Low phosphorus iron has advanced 50 cents, to $19.50, Philadelphia. The Pennsylvania railroad has purchased 4,000 tons of coke and charcoal irons for delivery at Altoona. A steam pump company has purchased 10,000 tons of foundry grades and is in the market for from 4,000 to 5,000 tons additional. A soil pipe maker has added 3,000 to 4,000 tons to a recent purchase. In the Buffalo market, sales of various grades have amounted to nearly 50,000 tons. In the Pittsburgh district, about 50,000 tons of basic has been sold and inquiries are pending for about an equal tonnage. Some basic has been sold at $13.25, valley, but $13 is the usual price. Demand for foundry iron in the Pittsburgh district shows some improvement. The Andrews Steel Co., Newport, Ky., has asked for 15,000 tons of basic for last half delivery.

Shapes and Plates

The quotation of 1.20c, Pittsburgh, on shapes and plates is almost universal, although reports are still current that this quotation can be shaded on very desirable business. Orders for shapes placed in Chicago amount to 6,625 tons. The McClintic-Marshall Construction Co. has the contract for the first section of a large steel car shop for the Harlan & Hollingsworth Corporation, Wilmington, Del. Heavy specifying on contracts for subway material in New York, amounting to 50,000 tons, has begun, and a new contract for 1,600 tons has been awarded to the American Bridge Co. A steamer to be built for the Pacific Coast Steamship Co. by the New York Shipbuilding Co. will require about 4,000 to 5,000 tons of steel, which will probably be awarded to Pittsburgh mills. The Carnegie Steel Co. will furnish from 1,600 to 1,800 tons for an oil barge to be built for the Standard Oil Co. by the American Shipbuilding Co. The passenger and package freight boat to be built at Port Arthur for the Northern Navigation Co. will require about 3,000 tons of steel, which has not been placed. Pending legislation prohibiting railway companies from being interested in ships is retarding the placing of orders at eastern ship yards. Uncertainty as to Panama canal tolls is also an unfavorable factor.

Railway Buying

Railways have been placing orders at a moderate rate for rolling stock and rails. Production of rails in Pittsburgh continues at a very high rate. The Lackawanna has decided to use concrete construction for its viaducts near Scranton, Pa., and will require 2,400 tons of reinforcing bars. If steel construction had been adopted, nearly 20,000 tons of steel would have been required. The Chicago & Great Western is in the market for from 7,000 to 10,000 tons of shapes. The Atlantic Coast Line has awarded 1,200 tons for bridges to the Pennsylvania Steel Co. The Virginia Bridge & Iron Works has taken the contract for a power house for the Virginia Railway & Power Co., and two viaducts for the Virginian railway.

PITTSBURGH

Heavy Inquiry for Pig Iron is Pending

Office of THE IRON TRADE REVIEW,
2148-49 Oliver Bldg., April 9.

The pig iron market this week is somewhat excited, with inquiries out for approximately 100,000 tons of basic and some round lots of foundry and forge iron. Coke is selling at its highest point for furnace grades, and is extremely scarce. The ovens are unable, as yet, to bring production up to normal, owing to labor conditions. The semi-finished steel demand is heavy and prices are generally firmer, while plates and shapes are holding their position firmly and increasing business is reported. The Harriman lines are asking bids on 9,400 cars and the Canadian Pacific railroad is asking bids on from 1,000 to 2,000 cars. Some fair sized orders for line pipe have been placed and inquiries are out for other lots that are promising of considerable new business. The undertone of the entire market is healthful.

Pig Iron.—Some large buying of pig iron has been going on quietly during the past week. The real extent is not yet definitely known, but it is estimated it will be from between 40,000 to 50,000 tons, while inquiries for additional tonnage may run it up to about 80,000 to 90,000 tons, all of basic iron. There is a decided improvement in the demand for foundry iron, and prices have shown much firmness. Inquiries from local consumers aggregating between 10,000 to 15,000 tons for last half delivery have come out. The price is firm at $13.25, valley, and there is some talk of better than this being done on small lots. A sale of 10,000 tons of Bessemer iron was a feature of the closing of last week at $14.25, valley. Some basic was sold at $13.20, and a fairly large sale was made at $13.25. A thousand tons of gray forge was closed at $12.90, furnace, and inquiries are out for an additional tonnage which promises to clean up that market pretty thoroughly for some weeks. The strength of the southern market has influenced the northern market favorably. The leading southern producers have advanced quotations on No. 2 foundry to $11, and are holding firmly at that figure with very little iron to sell. The Republic Iron & Steel Co. withdrew all quotations on southern foundry No. 2 below $11 last week for second and third quarter delivery, and is not considering quotations beyond the third quarter. A western consumer of basic iron has inquired for 6,000 to 8,000 tons, and an eastern steel company has asked for 1,500 tons of Bessemer for second quarter. A car building company is inquiring for 2,500 tons of malleable. The market for malleable is quite steady at $13, and the last quotations were at $13.25, while some furnaces are holding out for $13.50. Some of the merchant furnaces are having difficulty in operating because of a scarcity of ore of the proper grades at the furnaces, and also the slow shipment of coke. The leading interest is now operating all of its furnaces, excepting those isolated from steel works, which cannot operate successfully on the present market prices for iron. The Andrews Steel Co. at Newport, Ky., is asking for 15,000 tons of basic for last half delivery. We quote the market as follows:

(Prompt Shipment.)

Bessemer, valley	$14.25
Bessemer, Pittsburgh	15.15
Basic, valley	13.00
Basic, Pittsburgh	13.90
No. 2 foundry, Pittsburgh	14.15
Gray forge, Pittsburgh	13.65
Malleable, Pittsburgh	13.90

(Second Quarter.)

Bessemer, valley	$14.25
Bessemer, Pittsburgh	15.15
Basic, Pittsburgh	13.90
No. 2 foundry, Pittsburgh	14.15
Gray forge, Pittsburgh	13.65
Malleable, Pittsburgh	13.90

Ferro - Alloys. — The demand for ferro-manganese is very quiet, and while some carloads were reported sold during the past ten days for $45 to $50, Baltimore, they were for prompt shipment. Orders for forward delivery are not easily placed at this time. The scarcity of manganese has become acute. The leading interest is operating but two out of its three furnaces on manganese, and is barely able to supply its own requirements. Unless some improvement is made in delivery from the foreign producers, it is believed that a serious famine will prevail. The demand for 50 per cent ferro-silicon is quiet, and prices are firm at $70 to $71. Domestic grades are very firm with unchanged prices, but inquiries are reported to be slightly more active.

We quote ferro-manganese nominally at $45, Baltimore, for prompt delivery. The freight rate from Baltimore to Pittsburgh is $1.95 per ton.

Fifty per cent ferro-silicon is quoted nominally at $70 to $71, Pittsburgh, for prompt and forward delivery; 12 per cent, $22; 11 per cent, $21; 10 per cent, $20, f. o. b. Globe, Jisco and Ashland furnaces. The freight rate to Pittsburgh is $1.90. The foreign grades are held at $1 or more a ton over domestic prices.

Plates. — There is a generally stronger tone to the steel plate trade, specifications being much heavier, and larger producers are so well filled with orders that they are unable to make shipments under three or four weeks. Prices are firm at $1.20, Pittsburgh, tenders of less than that figure being rejected. While there are no new developments in the ship plate demand, railroads have appeared somewhat actively as buyers of cars, and are also making inquiries for large lots. The Harriman Lines have this week asked for bids on a total of 9,400 new cars, including 5,700 50-ton box cars, 1,000 refrigerator cars, 700 steel gondolas, 700 50-ton flat cars, 700 stock cars and 600 50-ton work cars. The Canadian Pacific railroad is also asking prices on from 1,000 to 2,000 freight cars, and the Kanawha & Michigan railroad is expected shortly in the market for from 1,000 to 2,000 cars. Car builders are getting a large number of small orders, which in the aggregate mean a very fair tonnage of steel plates, and are increasing their running schedule to meet this increased demand. A number of inquiries, which have been pending for some time for large lots of cars, are still to be distributed in the form of orders, and indications point to a very marked increase in demand for plates as a result. The comfortable position of the mills at the present time, it is believed, may easily be changed to one of congestion if the present activity in business continues. We quote the market as follows:

Tank plates, ¼ inch thick, 6¼ to 100 inches, 1.15c to 1.20c. Extras are as follows per 100 pounds: Boiler and flange steel plates, 0.10c; A. B. M. and ordinary firebox steel plates, 0.20c; still bottom steel, 0.30c; marine steel, 0.40c; locomotive firebox steel, 0.50c; all sketches excepting straight taper plates varying not more than 4 inches in width at ends, narrowest and being not less than 30 inches, 0.10c; circles, 0.20c. Plates in widths over 100 inches up to 110 inches, 0.05c; over 110 inches up to 115 inches, 0.10c; over 115 inches up to 120 inches, 0.15c; over 120 inches up to 125 inches, 0.25c; over 125 inches up to 130 inches, 0.50c; over 130 inches, 1c. Gages under ¼ inch to and including ⅜-inch plate on thin edge, 0.10c; under ⅜ and including No. 9, 0.25c. Five

cents extra for less than carloads. Terms net cash in 30 days.

Sheets.—The market for sheets is generally firmer, and production is probably larger than at any time this year with a particularly strong demand for galvanized sheets. An improvement in the general prices quoted, is noted, by at least $1 a ton. Producers in the Pittsburgh territory are holding rigidly to 2.90c, for galvanized sheets, and are getting all the business they seem to care for at that price. There is even talk of an advance in sheets in the not distant future. In the middle west, there are sales reported of black sheets on the basis of 1.85c, and in some localities as low as 1.80c is believed to be possible, in small lots for prompt shipment. The leading interest reports last week the best record in point of shipments of black and galvanized sheets in the history of the company. We quote the market as follows:

Blue annealed sheets No. 10 gage, 1.35c to 1.40c; black annealed sheets, No. 28 gage, 1.80c to 1.90c; galvanized sheets, No. 28 gage, 2.85c to 2.90c; painted roofing sheets, $1.35 per square for No. 28 gage, 2½-inch corrugation; galvanized roofing sheets, $2.45 per square for No. 28 gage, 2½-inch corrugation, f. o. b. Pittsburg.

Tin Plate.—Specifications are very heavy in all mills, and operations are on a basis of practically 100 per cent capacity. This has caused a better tone to the current trade, and for such new business as is coming out from time to time. Prices are stronger. While it is possible that some sales are made at $3.35 per base box, Pittsburgh, the majority of reports indicate that manufacturers are getting the nominal market price of $3.40. The inquiries for terne plate indicate a much broader market in the immediate future. We quote the market as follows:

Coke tin plate, 100-pound basis, 14 x 20, $3.35 to $3.40, f. o. b. mill, Pittsburgh district.

Rails and Track Material. — The specifying for standard section rails is keeping up at the same ratio in the opening of the second quarter, as has marked this feature of the rail trade during the first three months. The production of rails has been the greatest in some years, and is likely to continue heavy. The leading interest, in order to take care of open-hearth sections more advantageously, placed in operation its Ohio rail mill at Youngstown on rails, and transferred the billet and sheet bar production of that plant to the No. 2 rail mill of the Edgar Thomson Works at Braddock. The change does not alter the conditions of supply on sheet bars and billets, but enables a better run on open-hearth rails. The demand for light rails since the recent advance is more quiet, as was expected, but inquiries are still strong and the market is very firm. Traction railway interests are still buying very liberally for spring and summer construction work, and are helping to swell the average tonnage on rails. The manufacturers believe that there yet remains a very considerable tonnage of new business in standard sections to be placed before the middle of the year, by large buyers who have only partially covered on their requirements. Track material is moving slightly better with the approach of better weather, and specifications are coming in more freely for bolts, spikes and splice bars. Shipments are going forward more energetically. We quote the market as follows:

Fifty-pound and heavier, 1.25c per pound; carloads and less than 500 tons, 1.34c per pound; light rails on base weight of 40 to 45 pounds, 1.15c, the schedule on the other weights being irregular and subject to negotiations; angle splice bars for standard sections, 1.50c, Pittsburgh; track bolts, 2.20c to 2.25c, Pittsburgh.

Railroad Spikes

4½, 5 and 5½ and 9-16	$1.40
3, 3½, 4, 4½ and 5 x ½	.10
3½, 4 and 4½ x ⅞	.20
3, 3½, 4 and 4½ x ¾	.30
2½ x ⅜	.40
2½, 3 and 3½ x ⅞	.60
2 x ⅞	.80

Steel.—The semi-finished steel market is stronger, and keeps getting stronger every week. There is a scarcity of rolling billets, both Bessemer and open-hearth, and prices are very firm at $20, Pittsburgh. The larger producers are well sold up, and open-hearth billets appear to be so well taken up by contract orders for covering the second quarter, that there seems little likelihood of any softening in prices for some time. The demand for sheet bars is also very active, and Bessemer bars are scarce to such an extent that it is doubtful whether new business could be done at $21, Pittsburgh. While the scarcity is not so acute in open-hearth bars, this grade is also strong at $21, and there is comparatively little tonnage to be had within the present quarter. Buying of surplus tonnage has been going on quietly for some time, and deliveries are now being complained of by consumers who are unable to get shipments promptly. We quote the market as follows:

Bessemer 4 x 4 billets with 0.25 carbon and less are quoted at $20, with the usual extra for size and analysis, and open-hearth rolling billets, $20; Bessemer sheet and tin bars are quoted at $21, and open-hearth sheet bars are quoted at $21, f. o. b. Pittsburgh, with full freight to destination added. Forging billets are quoted at $28, Pittsburgh.

Hoops and Bands.—There is a very satisfactory demand upon mills for hoops and bands, and shipments continue larger as the season advances, but new business is not coming out at present. Prices are firm at 1.30c for hoops, and 1.15c for bands. There are reports of shading on the prices for hoops, but there is little evidence to indicate that this is correct. We quote the market as follows:

Hoops in carload lots, 1.25c to 1.30c, Pittsburgh; in less than carload lots, 1.40c; bands, 1.15c, base, with net extras, as per standard steel.

Merchant Bars. — The demand for merchant bars continues quite active, and prices are firm at 1.15c, Pittsburgh, as the bottom quotation. Some sales were reported this past week at 1.20c in small lots. There is also a slightly improved tone to the inquiries, and large buyers with contracts at the lower quotations are specifying heavily against these contracts. The demand for steel shafting is a little better in general tone, and specifications are stronger. Prices are still somewhat weak. The chief buying continues to be in the automobile trade. The demand for iron bars has shown improvement, and prices are firmer with 1.30c as the minimum quotation, and there is some business going at 1.35c. Manufacturers report both specifications and new business on a much larger scale, and inquiries much better in tone. We quote the market as follows:

Common iron bars, 1.30c to 1.35c, Pittsburgh; Bessemer and open-hearth steel bars, 1.15c to 1.20c; plow and cultivator, 1.25c; channels, angles, zees, tees, under 3 inch, 1.25c, all f. o. b. mill. The following differentials are maintained on steel: Less than 2,000 pounds of a size, 0.35 advance. Cold rolled and ground shafting, 65 per cent off in carloads and 60 and 10 per cent in less than carloads, delivered in base territory.

Muck Bar.—The market for muck bar is unchanged with the exception of some slight improvement in specifying against contracts. Indications point to a little more activity coming in the immediate future. Some of the producers are running partially and others are still idle pending improvement in demand. Prices are unchanged, and we continue to quote $28 to $29, Pittsburgh.

Structural.—The general tone of the structural steel market is improving from week to week. There are a number of inquiries in the market for bridge material, principally from railroads. The Pennsylvania railroad is also making inquiries for material for the new freight station at Indianapolis. The Atlantic Coast Line railroad is asking bids for 1,600 tons of bridge material. The Chicago & Great Western is in the market for 7,000 to 10,000 tons, while inquiries are appearing in the market from Ohio and Penn-

sylvania for a number of highway bridges. The chief note of interest in Pittsburgh has been the filing of plans for the enlarged Fort Pitt hotel, but the actual tonnage is not yet made known. There are some changes being made in plans for the new theater at Penn avenue and Seventh street, Pittsburgh, which will call for new specifications on steel, and these will be out shortly. Fabricators report a slightly improved tone to the market generally, but not sufficient to satisfy the needs of that branch of trade. We quote the market as follows:

Beams and channels, 15 inches and under, zees, 1.15c to 1.20c; tees, 1.15c to 1.20c; angles, from 3 to 6 inches, 1.15c to 1.20c; over 6 inches, 1.25c to 1.30c; universal and sheared, 1.20c to 1.25c; over 15 inches, 1.30c to 1.35c; plates, 6¼ inches wide and wider, 1.30c.

Merchant Pipe.—Merchant pipe is in fair demand, and specifications are keeping up. Prices are steady without change. Inquiries for line pipe appear to be a little more interesting, but are confined to comparatively small lots, in so far as actual new projects are concerned. Several inquiries that have been in the market for some time are still indefinite, one of which requires 60 miles of 12-inch pipe, another 25 to 30 miles of 2-inch pipe, and a third for about 20 miles of 10 to 12-inch pipe. The inquiries for the past week include one for 12 miles of 12-inch line pipe for Ohio delivery, while an order has been placed for from 12 to 15 miles of 4-inch pipe for Canadian delivery with an independent mill, and a local gas company has placed an order for 3 miles of 8-inch steel line pipe. The line pipe inquiries are expected to develop into actual inquiries by May 1. We quote the official discount to jobbers subject to the usual preferential discount to the larger buyers as follows:

Iron and Steel Pipe Basing Prices

	Steel.		Iron.	
	Butt weld.			
	Black.	Galv.	Black.	Galv.
⅛, ¼ inch	74	54	68	48
⅜ inch	75	65	69	53
½ inch	78	68	72	59
¾ to 1½ inch	81	73	75	64
2 to 3 inches	82	75	76	65
	Lap weld.			
2 inches	79	72	72	63
2½ to 4 inches	81	74	74	66
4½ to 6 inches	80	72	73	65
7 to 12 inches	77	68	71	61
13 to 15 inches	55	..	47	..
Extra Strong, Plain Ends.				
			Butt weld.	
⅛, ¼, ⅜ inch	70	60	65	55
½ inch	75	69	70	63
¾ to 1½ inch	79	73	74	65
2 to 3 inches	80	74	75	66
Extra Strong, Plain Ends.				
			Lap weld.	
2 inches	76	70	71	63
2½ to 4 inches	81	74	74	66
4½ to 6 inches	77	71	72	65
7 to 8 inches	70	60	65	55
9 to 12 inches	65	55	60	50
Double Extra Strong, Plain Ends.				
			Butt weld.	
½ inch	65	59	60	52
¾ to 1½ inch	68	62	63	55
2 to 3 inches	70	64	65	57
Double Extra Strong, Plain Ends.				
			Lap weld.	
2 inches	66	60	61	52
2½ to 4 inches	68	62	63	57
4½ to 6 inches	67	61	62	56
7 to 8 inches	60	50	55	45

Plugged and reamed pipe is furnished at 2 points higher price, either butt or lap weld.

The above discounts are for full weight pipe, subject to a variation of 5 per cent, merchant pipe, when specified, being furnished up to 6 inches at one point higher discount (lower price.)

Boiler Tubes. — The demand for boiler tubes is slightly stronger, and more inquiries are reported than for some time past. Mills report specifications as coming in more regularly, and for larger requirements from consumers. While the official discount holds good at this time, there are reports of an extra discount for large orders amounting to "five and five" off this discount list. Activity in the locomotive plants has increased the demand for locomotive boiler tubes, and shipments have become greater as a result. We quote the market as follows:

Steel

1¾ to 2¼ inch	65
2½ inch	67½
2¾ to 3¼ inch	72
3½ to 4½ inch	75
5 and 6 inch	67½
7 to 13 inch	65

Charcoal Iron

1½ inch	48
1¾ to 2¼ inch	50
2½ inch	55
2¾ to 5 inch	60

To destination east of Mississippi river will be sold at delivered discount for carloads lowered by 2 points, for lengths 22 feet and under; longer lengths, f. o. b. Pittsburgh. Usual extras to jobbers and boiler manufacturers.

Wire Products.—There are indications that new business is being taken by manufacturers of wire products covering the first half of the present year at $1.55 on wire nails. Extensions are made to existing contracts to cover to July 1 on this same basis. Manufacturers report specifications as very liberal on existing contracts, and new business is quite active, but only when the price concession is made of $1 a ton. The market is apparently unable to sustain a further advance at this time. We quote the market as follows:

Wire nails, jobbers, carload lots, $1.55 to $1.60; retailers' carload lots, $1.60 to $1.65; cut nails (western makers), jobbers' carload lots, $1.55 to $1.60, painted barb wire, jobbers' carload lots, $1.60; retailers' carload lots, $1.65 with 30c for galvanizing; plain wire to jobbers in carloads, $1.40; and to dealers, in carloads, $1.45; polished staples, $1.60; galvanized staples, $1.90.

Wire Rods.—A slight change for the better is noted in the demand for wire rods, and specifying continues actively. Prices are holding firm to $25.50 to $26, Pittsburgh, and we continue to quote this price for Bessemer and open hearth wire rods.

Coke.—The coke market is still in an excited state, and prices are higher for spot furnace coke than at any time this year. Sales during the past week have been made at $2.75, ovens, quite freely. It is largely a question of finding the coke and not the buyer at this time. Contract coke is not a feature of the market. There are practically no inquiries for contract coke of any description. It is doubtful, in the present perturbed condition of the coke market, whether anyone would care to contract for the last half supply, or even the third quarter. The advance in wages of the coke workers has had a good effect in checking migration of the laborers. Some are returning, and more are expected within the next week or ten days. The past week has been one of severe curtailment, due largely to it being Easter holiday season, when the thousands of foreigners refuse to work at all. Some plants of as large as 2,000 ovens have been unable to operate on this account. Foundry coke remains practically unchanged, prices being steady at $2.75 to $3. The demand is only fair as the larger consumers are fairly well covered for the first half of this year. Inquiries for spot furnace coke are urgent, and the Connellsville region has been scraped pretty bare of stock, but the conservative operator is inclined to doubt the maintenance of the present abnormal price on furnace coke when labor conditions become more normal and plants are able to get out their full tonnage. Some sales covering the next 90 days' delivery were reported on furnace coke at $2.40, ovens. This seems to be about the normal price for contract coke. Last week's production in the Connellsville region was the best this year thus far, being a total of 413,141 tons, or 14,294 tons greater than the previous week. The gain was made mainly by the furnace ovens. Shipments made a gain of 835 cars for the week. *The Connellsville Courier* reports for the week ending March 30, a production of 413,141 tons as against 398,847 tons for the prior week. We quote standard Connellsville furnace coke at $2.50 to $2.75 for prompt shipment, and on contract $2.25 to $2.40. For standard Connellsville foundry coke we quote, $2.75 to $3, ovens, for spot shipment, and $2.75 to $2.90, ovens, on contract. Most of the sales during the past week have been confined

to small lots, but there were no large accumulations of coke to be had.

Old Material.—The market for old material is stronger. There is a fairly active demand for heavy melting steel, but sales are confined to comparatively small tonnages, and these have gone on a basis of $13, Pittsburgh. More business could undoubtedly be secured by the dealers at these figures if the material was available or ready for shipment, but neither the dealer nor the buyer appear to be anxious to take or place any large orders for forward delivery. Old iron axles have been in better demand and have advanced 50 cents a ton from $21.50 and $22 to $22 and $22.50. Re-rolling rails are firmer at an advance of 50 cents, and are now quoted at $13.50 and $14. We quote gross tons delivered in the Pittsburgh district including Monessen, Steubenville, Brackenridge and Follansbee as follows:

Heavy melting scrap	$12.75 to 13.00
Rerolling rails	13.50 to 14.00
Malleable	12.50 to 13.00
Bundled, sheet scrap	11.00 to 11.50
Iron axles	22.00 to 22.50
Old iron rails	15.00 to 15.50
Stove plate	9.00 to 9.50
No. 1 wrought scrap	12.50 to 13.00
Old car wheels	12.50 to 13.00
Low phosphorus	14.75 to 15.00
Machine shop turnings	9.75 to 10.25
Cast borings	9.50 to 9.75
No. 1 cast scrap	12.50 to 12.75

CHICAGO

Price Advances Maintained---Orders Well Distributed

Office of THE IRON TRADE REVIEW, 1328 Monadnock Blk., April 9.

With politics in Illinois at sizzling heat, the business men of the west are going quietly about their affairs, adding to the progress which has already been achieved in industrial circles. The iron and steel trade finds that the price advances which were announced a little over a week ago are being maintained with no special difficulty. Steel bars, which have been a weak spot in the market for some time, are appreciably firmer, the minimum quotations now being 1.30c, Chicago. The pig iron situation has toned up considerably and the demand for structurals and plates continues to tax the capacity of the mills in this district. One of the most encouraging features of the prevailing activity is that the business is well distributed and not confined to any special channels.

Pig Iron.—The week under review has been characterized by activity in southern iron, accompanied by further stiffening of prices on the part of both northern and southern producers, although the latter seem to be in the firmer position. The general asking price for northern iron is now $14.50 at the furnace, although scattered sales at lower figures are still being made. A South Bend, Ind., foundry has purchased 500 tons of prompt shipment iron from a Chicago furnace. A Janesville, Wis., manufacturer is in the market for 300 tons of analysis iron. Sales are perceptibly heavier and inquiry is more widely scattered and larger in volume. There are few individual inquiries, however, for more than 500 tons. A Rockford manufacturer has purchased 1,400 tons of southern iron for last half delivery. The price is said to be $10.75, Birmingham, for third quarter shipments and $11 for fourth quarter. For prompt shipment, southern iron may still be quoted $14.85, Chicago; for third quarter and last half business $15.10 is being asked, although some producers have put their prices up to $11, Birmingham. Makers do not seem to be willing to quote for the fourth quarter alone.

The following prices represent the market for Chicago, delivered, except local northern foundry and malleable Bessemer, which are quoted f. o. b. furnace.

	Third quarter.	Last half.
Lake Superior charcoal	$16.50	$16.50
Northern foundry No. 2	14.50	14.50
Southern foundry No. 2	14.85	15.10
Southern silv'ries, 5 per cent sil.	15.60	16.10
Jackson co. silveries, 8 per cent	17.40	17.90
Malleable Bessemer	14.50	14.50
Alabama basic	14.85	15.10

Merchant Bars.—Steel bars are firmer, the minimum price now being 1.30c, Chicago. A number of manufacturers, including one local mill, are quoting strictly on a basis of 1.15c, Pittsburgh, which is equivalent to 1.33c, Chicago. It is doubtful if any new business can be placed now at 1.25c. Hard steel is also firmer and one interest at least has advanced its minimum quotations to 1.20c, Chicago. There is not much change in the price of bar iron, although the tonnage continues to hold up fairly well. In view of the rising scrap market, the iron mills are taking a very firm attitude regarding prices.

We quote, f. o. b. Chicago, as follows:

Bar iron, 1.15c to 1.20c; hard steel bars, rerolled, 1.18c to 1.20c; soft steel bars, bands and small shapes, 1.30c to 1.38c base; hoops, 1.48c; smooth finished machinery steel, 1 inch and larger, 1.78c; shafting 60 per cent off list for carload lots, 55 per cent off for less than carloads.

On iron and steel from local stock, we quote as follows:

Bar iron, 1.50c to 1.60c per pound base; soft steel bars, 1.50c to 1.60c per pound base; soft steel hoops, 1.80c to 1.90c, full extras.

Structural Material.—There is considerable evidence that fabricators are quoting higher prices. The aggregate volume of business continues satisfactory, the total tonnage of contracts let in the west last week being 6,625. The Chicago, Milwaukee & St. Paul has let contracts for 836 tons of bridge material, divided as follows: 375 tons to the Wisconsin Bridge & Iron Co., 125 tons to the Milwaukee Bridge Co. and 336 tons to the American Bridge Co. The latter has also taken 2,500 tons for the Borland building, Chicago; 530 tons for the Empress theater, Portland, Ore., and 560 tons for transmission towers on the new line between St. Louis and Keokuk, Ia. A contract involving 185 tons has been let for roof trusses for a new building at the Agricultural and Mechanical College of Texas. The Mead-Morrison Mfg. Co. has placed 101 tons for coal handling towers at Milwaukee. Other fabricating contracts reported in the west last week are as follows: St. Adalberts church, Chicago, 380 tons, let to the Gage Structural Steel Co.; Illinois State Normal University, Normal, Ill., 308 tons, let to the Decatur Bridge Co.; a 325-ton coal handling bridge for the Mead-Morrison Mfg. Co., Chicago, let to the Milwaukee Bridge Co., and a 369-foot railway draw span at Meridian, Cal., 900 tons, for the Northern Electric Railway Co., let to the Pennsylvania Steel Co.

We quote, mill prices, f. o. b. Chicago, as follows:

Beams and channels, 15 inches and under,

1.35c to 1.38c. For extras, see Pittsburgh report.

Plain material out of store is as follows:

All angles, 3 inches and larger, including 6 inches, $1.60 to $1.65 per 100 pounds; angles over 6 inches, $1.70 to $1.75 per 100 pounds, base; beams, 3 to 15 inches, inclusive, $1.60 per 100 pounds, base; channels, 3 inches and larger $1.60 per 100 pounds, base.

Rails and Track Fastenings.—No additional rail business of consequence has been placed recently. The St. Paul is understood to be negotiating for additional tonnage. Makers are firmly maintaining the advanced prices on light rails and are making some sales at the new figures. The Joliet plant of the Illinois Steel Co. is busy with specifications for track fastenings and prices of spikes, bolts and nuts are firm.

We quote, light rails, f. o. b. Chicago, and track fastenings, f. o. b. Joliet, as follows:

Light rails, carloads, 25 to 45-pound, 1.20c to 1.25c; 16 to 20-pound, 1.25c to 1.30c; 12-pound, 1.30c to 1.35c; 8-pound, 1.35c to 1.40c.

Light section relayers, 45 pounds and under, subject to inspection, $21 to $23; standard section relaying rails, subject to inspection, $23.50 to $24.

Track fastenings, f. o. b. Joliet, angle bars, 1.50c; railroad spikes, 1.55c to 1.60c, smaller size spikes, 1.65c, base; track bolts with square nuts, 1.90c to 2.00c base.

Plates.—The new prices on plates are well maintained. Until recently mills in Ohio have been entering this market rather freely with low quotations, but most of these offerings have been withdrawn. Since the local makers are filled up with a very heavy tonnage, prices are correspondingly stiff. Full details regarding the equipment orders of the Wabash railroad have been made public. A total of 3,250 freight cars were purchased, divided as follows: 1,200 box cars with steel underframes; 1,000 stock cars with steel center sills; 750 automobile cars and 300 all-steel gondola cars, all 100,000 pounds capacity. This is one of the largest orders for freight equipment that has been placed recently. The Chicago & Northwestern is building 60 cabooses in its own shops. The Illinois Central has ordered six dining cars from the Pullman Co. and the Northern Pacific has ordered 50 express cars from the American Car & Foundry Co. The Texas & Pacific has ordered 70 chair cars and eight coaches from the Pullman Co. Inquiries for passenger equipment are heavy.

We quote, mill prices, f. o. b. Chicago, as follows:

Tank plates, ¼ inch thick, 6⅝ to 100 inches wide. 1.35c to 1.38c. For extras, see Pittsburgh report.

Store prices are as follows:

Tank steel, ¼ inch and heavier, up to 72 inches wide, 1.60c.

Sheets.—Specifications and current orders for sheets are running very heavy. Prices are in general well maintained, although there are still a few concessions to be had. The movement of sheets out of stock indicates a heavy demand on the part of small buyers.

We quote, store prices, f. o. b. Chicago, as follows:

Blue annealed, No. 10, 1.90c; No. 12, 1.95c. Box annealed, No. 28, 2.30c. Galvanized, No. 28, 3.35c.

For mill prices, see Pittsburgh report. Freight to Chicago, 18 cents.

Wire Products.—Business in nails and industrial wire is on a very satisfactory basis and the demand for fencing and agricultural wire has improved perceptibly during the past ten days. Mills are running on better schedules and are making large shipments. Inquiries for new business for future delivery are being quoted on a basis of 1.60c, Pittsburgh.

We quote, f. o. b. Chicago, as follows:

Wire nails, jobbers' carload lots, $1.78; retailers' carload lots, $1.88; retailers' less than carload lots, $1.98; painted barb wire, jobbers' carload lots, $1.78; retailers' carload lots, $1.88; retailers' less than carload lots, $1.98, with 30c for galvanizing; plain wire, jobbers' carload lots, $1.58; retailers' carload lots, $1.63.

Merchant Pipe and Tubes.—The carpenters' strike has not turned out to be as serious as was anticipated and it is expected that building operations will expand rapidly from now on. The demand for merchant pipe is somewhat better, although still below normal. Merchant boiler tubes are somewhat slow but the situation has a healthier aspect than was the case a week ago.

We quote, store prices on merchant pipe and tubes, f. o. b. Chicago, as follows:

Iron and Steel Pipe Basing Prices

	Steel.		Iron.	
	Black.	Galv.	Black.	Galv.
Butt.				
⅛ inch and ¼ inch.	71.2	50.2	63.2	42.2
⅜ inch	75.2	64.2	68.2	52.2
½ inch to 1½ inch.	78.2	69.2	71.2	59.2
Lap.				
2 inch	76.2	68.2	68.2	58.2
4½ inch to 6 inch..	77.2	68.2	69.2	60.2
Card Weight.				
7 inch to 12 inch...	74.2	63.2	67.2	56.2
Extra Strong Plain Ends.				
Butt.				
⅛, ¼, ⅜ inch.....	66.2	54.2	60.2	48.2
½ inch	71.2	59.2	65.2	53.2
2 inch to 3 inch...	76.2	64.2	....	....
Lap.				
2 inch	72.2	60.2	66.2	54.2
7 inch to 8 inch.....	66.2	54.2	60.2	48.2
Double Extra Strong.				
Butt.				
½ inch	59.2	47.2	....	....
¾ inch to 1½ inch.	62.2	50.2	....	....
Lap.				
2 inch	60.2	48.2	....	....
4½ inch to 6 inch..	61.2	49.2	....	....
7 inch to 8 inch....	54.2	42.2	....	....

Tubes

	Lap weld steel.	Charcoal iron.	Shelby seamless.
	Per cent.	Per cent.	Per cent.
1 inch	39	..	57½
1¼ to 2¼ inch.....	55	40	35
2¾ to 3¼ inch.....	65	50	46
3½ to 4½ inch.....	67½	50	46
5 to 6 inch.....	55	..	..

Cast Iron Pipe.—Bids were opened April 8, at Moline, Ill., on 10,000 feet of 6 and 8-inch pipe. The award will probably be made this week. There have been no orders of consequence lately.

We quote, f. o. b Chicago, as follows:

Four-inch water pipe, $26.50; 6 to 12 inches, $24.50, larger sizes, $24; gas pipe, $1 a ton higher.

Old Material.—The scrap market continues to advance, although well informed interests are convinced that it is in a rather unsteady position. Nevertheless, there has been a healthy increase in demand which must be reckoned with and is at least partially responsible for the continued upward trend in quotations. Also, as prices advance, dealers are less inclined to dispose of their holdings, some of which were purchased as long as two years ago at much higher levels. This gives the market a certain amount of artificial stimulus. Advances of from 25c to 50c a ton are noted on many items.

We quote, delivered in consumers' yards, Chicago, as follows:

Gross Tons

Old car wheels	$13.00 to 13.50
Old iron rails	15.00 to 15.50
Rerolling rails (5 ft. and over)	12.50 to 13.00
Old steel rails (3 ft. and under)	11.75 to 12.25
Frogs, switches and guards	11.00 to 11.50
Heavy melting steel	11.00 to 11.50
Shoveling steel	11.00 to 11.50

Net Tons

No. 1 R. R. wrought	$12.00 to 12.50
No. 2 R. R. wrought	11.00 to 11.50
Arch bars and transoms	14.50 to 15.00
Knuckles, couplers and springs	11.50 to 12.00
Shafting	14.50 to 15.00
Iron car axles	19.00 to 19.50
Steel car axles	15.75 to 16.25
Locomotive tires	13.50 to 14.00
Dealers forge	10.00 to 10.50
Pipe and flues	8.50 to 9.00
No. 1 cast	11.50 to 12.00
No. 1 busheling	9.50 to 10.00
No. 2 busheling	7.00 to 7.50
No. 1 boiler cut	7.75 to 8.25
Boiler punchings	12.50 to 13.00
Cast and mixed borings	6.25 to 6.75
Machine shop turnings	7.00 to 7.50
Railroad malleable	11.50 to 12.00
Agricultural malleable	9.75 to 10.25
Angle bars, splices, etc., iron	13.00 to 13.50
Angle bars, steel	11.00 to 11.50
Stove plate and light cast scrap	9.75 to 10.25

The Pulaski furnace, at Pulaski City, Va., was recently blown out because of a caving in of the lining. The furnace is now being repaired and will shortly resume operations.

CLEVELAND

Large Tonnage of Iron Ore Sold

Office of THE IRON TRADE REVIEW,
Penton Bldg., April 9.

Iron Ore.—A very large tonnage of ore has been sold. Including ore which has been allotted by selling agencies to allied and constituent companies, probably 8,000,000 to 10,000,000 tons have been disposed of. Sales already made indicate that about a million tons will go to eastern consumers, a very large increase over the ore taken by eastern consumers for a number of years. On account of the reduction in prices, some mines will not be operated this year, but it is expected that independent companies will show an increase of about 30 per cent over last year's shipments, and that the Steel Corporation will ship from 5,000,000 to 6,000,000 tons more than it did last year, making the total shipment exceed 40,000,000 tons. Some ore may be loaded this month, but it is not expected that any considerable tonnage will be shipped before May 1.

Additional vessel tonnage has been chartered at 40 cents net from the head of the lakes, and it is believed that fully a million tons have been covered at this rate. Although a large tonnage has also been chartered at 45 cents, the 40-cent rate seems to be pretty well established. In some cases, the chartering at 40 cents covers several years.

The announcement made a few days ago that the ore unloading charge would probably be 10 cents, a reduction of only 5 cents from last year, was received with vigorous protests from some vessel and ore interests. A considerable tonnage of ore has been sold with the understanding that the unloading charge would be 7 cents and ore men say that if a 10-cent rate is made, the 3 cents will come out of their pockets. While it is conceded that the most modern ore handling plants would make a large profit at 7 cents, if fully employed, operators of docks which are not so modern in equipment declare they cannot make any money at that figure. Shipments of ore from lower lake docks to furnaces last month amounted to 902,007 tons, and it is expected that there will be a good movement this month, so that the ore on docks, May 1, will be from 600,000 to 800,000 tons less than on May 1, 1911. The mild weather of the past few days has greatly facilitated the handling of ore from docks.

It is estimated that lake vessels could easily handle 43,000,000 tons during the season.

On base ores with the guarantee of 55 per cent on old range and Mesabi Bessemer, and 51½ per cent on old range and Mesabi non-Bessemer, we quote as follows: Old range Bessemer, $3.75; Mesabi Bessemer, $3.50; old range non-Bessemer, $3.05; Mesabi non-Bessemer, $2.85.

Pig Iron.—Only a fair amount of business is being transacted in the Cleveland district. Prices do not show any change. Cleveland agencies have shared in the recent sales of basic at $13, valley. We quote, delivered in Cleveland as follows, the higher prices when given being for last half, while the lower quotations are for the first half of the year:

No. 1 foundry	$13.75 to 14.00
No. 2 foundry	13.25 to 13.50
No. 2 southern	14.85 to 15.10
Gray forge	12.50 to 12.75
Bessemer	15.15
Lake Superior charcoal	16.50
Jackson co. 8 per cent silvery	17.05

Coke.—Easier conditions prevail, but prices are well maintained. We quote:

Connellsville furnace coke, $2.25 to $2.40 for prompt delivery, and $2.25 on contract; Connellsville foundry coke, $2.75 to $3.00 for prompt, and $2.60 to $2.75 on contract.

Finished Material.—Following the heavy specifying on contracts prior to April 1, there has been a lull in the market, but quotations are well maintained, with 1.15c on bars and 1.20c on plates and shapes as minimum quotations, except in rare cases. Jobbing business shows a decided improvement. One large jobbing company last week had the best record in its history. The new passenger boat to be built by the Western Dry Dock & Ship Building Co., Port Arthur, for the Northern Navigation Co., will require about 3,000 tons of shapes and plates for which the contract has not been placed. The Carnegie Steel Co. will furnish from 1,600 to 1,800 tons of steel for an oil barge to be built by the American Ship Building Co., for the Standard Oil Co. The Lake Shore railroad has purchased a considerable tonnage of bar iron during the week, and the Nickel Plate has purchased several hundred tons of bars, shapes and plates. There is increased activity in nuts and bolts and leading makers are well supplied with orders. Prices show some improvement.

Old Material.—Little interest is being taken in heavy melting steel by local consumers, nor is there much business doing with consumers outside this city. Rolling mills are practically out of the market, and the local situation is none too promising for the present. Several railroad lists will close shortly, but the tonnage offered is problematic in the case of the Lake Shore, which has changed its methods of offering. The Erie sold some material a few days ago, which went at lower prices than prevailed at the last closing. Prices are unchanged, although largely nominal, and we quote, gross tons, f. o. b. Cleveland, as follows:

Gross Tons

Old iron rails	$14.00 to 14.50
Old steel rails (under 6 ft.)	11.25 to 11.75
Old steel rails (over 6 ft.)	11.50 to 12.00
Relaying rails	19.50 to 20.00
Old car wheels	11.50 to 12.00
Old steel boiler plate	9.50 to 10.00
Malleable iron (railroad)	11.00 to 11.50
Steel axles	17.00 to 17.50
Axle turnings	8.50 to 9.50
Malleable iron (agricultural)	10.00 to 10.50
Heavy steel	11.00 to 11.50
Country mixed steel	9.00 to 9.50
Bundled sheet scrap	7.50 to 8.00

Net Tons

No. 1 R. R. wrought	$11.00 to 11.50
No. 1 busheling	9.00 to 9.50
No. 1 machine cast	10.75 to 11.25
No. 1 dealers' wrought	9.00 to 9.50
Machine shop turnings	7.25 to 7.50
Pipes and flues	8.00 to 8.50
Wrought drillings	7.25 to 7.50
Stove plate	9.00 to 9.50
Cast borings	7.00 to 7.25
Wrought iron piling plate	15.50 to 16.00
Wrought iron arch bars	14.50 to 15.00

Gas Engine Show.—The National Gas Engine Association announces that the first annual gas engine show, to include everything in gas power and allied lines, will be held in Milwaukee, June 17 to 22, inclusive, in connection with the convention of the association. The show will be held in the Auditorium, that city, where about 100 exhibition spaces have already been laid out. Applications for space, etc., should be directed to O. C. Parker, president of the association, La Crosse, Wis.

The P. J. Brown Construction Co., Cleveland, commenced work on April 3 on relining the stack and repairing the coke ovens of the Zenith Furnace Co., Duluth.

CINCINNATI

Prices of Southern Pig Still Tend Upward

Office of THE IRON TRADE REVIEW,
503 Mercantile Library Bldg., April 9.

Pig Iron.—The market here is more unsettled than it has been for some time, but the tendency is undoubtedly towards better conditions. Dealers do not agree as to present prices, especially for the third quarter, and are quoting for this delivery all the way from $10.50 to $11, Birmingham, for No. 2 foundry. The general asking prices, however, today seem to be $10.50 for delivery through the first half; $10.75 for third quarter; and $11 for the last quarter, all Birmingham basis. These may change at any time, though, as sales are reported today to have been made at all of these three prices for third quarter, the latter two prevailing with the $11 sales being more scarce than those at $10.75. It is quite probable, judging from the general trend of the market, that in a day or so the higher prices will prevail and quotations will be as follows: $10.50 to $10.75 for spot shipment; $10.75 to $11 for third quarter and $11 to $11.50 for fourth quarter. In fact, these prices are being asked today by some dealers, who declare they will be as high as $12 for the last quarter by the end of the week. On the other hand, other dealers say that they are finding it difficult to sell at $10.75 for the last half, and decline to quote an advance until conditions warrant it more fully. These advances cannot be considered as a boom, but are more the direct result of furnaces taking advantage of the fact that they have contracted for practically their whole output for a time at least, and also that they have reduced stocks in their yards to a minimum, thereby causing them to become more or less independent, not caring whether they sell any iron at present or not. In many instances, agents claim that they could dispose of more iron if they only had it to sell. It is generally known also, that certain melters have not bought to any large extent for some time, having contracted through the first half, and using the iron as it has been shipped to them. They will, therefore, soon be forced to buy certain requirements for the second half, and this should be a factor in keeping the market up. Inquiries and sales have been better during the past week than at any time since prices have been advanced, and some good tonnages have been sold. The northern situation is unchanged, the market for Ironton grades being rather slow. The price of $13.50, furnace, is holding firm, however, furnaces declining to allow any reductions. New inquiries include 1,075 tons of southern iron, from a Tennessee manufacturer, for April, May and June delivery; 2,000 tons of No. 3, 2,000 tons of No. 4, and 1,000 tons of mottled iron for the same shipment, from a Virginia user; 600 tons of northern and southern iron for second half shipment, from a melter in this territory; 500 tons of southern grades also from this territory, and 500 tons of southern iron from southern territory, both extending into the third quarter; and 1,000 tons of analysis iron from another southern consumer. With freight rates from Birmingham, $3.25, and from Ironton, $1.20, we quote Cincinnati prices, as follows:

Southern foundry No. 2	$13.75 to 14.25
Southern foundry No. 3	13.25 to 13.75
Southern foundry No. 4	12.75 to 13.25
Southern gray forge	12.50 to 12.75
Mottled	12.25 to 12.50
Southern No. 1 soft	14.25 to 14.50
Southern No. 2 soft	13.75 to 14.25
Standard southern car wheel	25.25 to 25.50
Northern No. 2 foundry	14.70
Northern No. 3 foundry	14.20
Northern No. 4 foundry	13.95 to 14.20
Jackson co. 8 per cent silicon	16.45 to 16.95

Coke.—The coke market has stiffened up a little since the slight relapse last week. The situation, however, is practically unchanged. The slight lowering of prices on some grades that followed the agreement reached by the striking miners and the operators a short time ago apparently did not hold, due probably to the scarcity of coke. This has been brought about by the fact that there is a decided shortage of labor in the coke fields, and that several companies have found it more profitable to put out their ovens and sell the coal. Prices cannot be placed upon a definite level, as the conditions of the sale and the time of shipment completely over-rule exact quotations. Some fairly good tonnages are reported to have been sold during the past few days. From general reports, we quote as nearly as possible from the leading coke producing districts as follows:

Connellsville district:	Prompt shipment.	Contract second half.
Foundry coke	$2.75 to 3.00	$2.50 to 3.00
Furnace coke	2.25 to 2.50	2.10 to 2.25
Wise county district:		
Foundry coke	$2.65 to 3.00	$2.50 to 2.75
Furnace coke	1.90 to 2.25	*Sliding [scale basis
Pocahontas district:		
Foundry coke	$2.75 to 3.00	$2.75 to 3.00
Furnace coke	2.25 to 2.50	2.25 to 2.50
New river:		
Foundry coke	$2.75 to 3.00	$2.50 to 3.00
Furnace coke	2.25 to 2.50	2.15 to 2.30

*Sliding scale basis means $1.60 for coke based on $9, Birmingham, for pig iron, with an advance of 16 2-3 per cent of the amount over $9 which pig iron is quoted. This is the usual basis. Other forms of sliding contracts are also made.

Finished Material.—Steel bars and structurals are much firmer, the former at 1.15c and the latter at 1.20c, both Pittsburgh basis, with a general prevailing feeling that there will be an advance in a few days. Several large eastern makers have asked their local offices to close all pending business at the present quotations as quickly as possible, which is a good prediction of better prices. The local sheet situation is improved and business is better with the local mill. Prices are firmer and are as follows, all f. o. b. Pittsburgh basis: Black sheets, No. 28, 1.85c to 1.90c; blue annealed sheets, No. 10, 1.40c; galvanized sheets, No. 28, 2.85c to 2.90c. For other mill prices see Pittsburgh report.

Warehouse business has been fair as a whole during the past week. The spasmodic buying that comes with every strip of good weather indicates that users of the different materials carried have no stocks on hand, and that a general good buying movement should come as soon as the weather settles definitely. Prices are unchanged, and we quote for warehouses, f. o. b. Cincinnati, as follows:

Steel bars, 1.60c base; iron bars, 1.55c to 1.60c base; structurals, 1.70c base; plates, ¼ inch and over, 1.70c base; sheets, blue annealed, No. 10, 1.90c base; rivets, cone head, 2.25c base; cold rolled shafting, 60 per cent discount; boiler tubes as follows: 1¾ to 2¼ inch, 61 per cent discount; 2½ inch, 63 per cent discount; 2¾ to 3¼ inch, 66 per cent discount; 3½ to 4½ inch, 68 per cent discount; and 5 to 6-inch, 61 per cent discount; and soft steel cold twisted concrete bars, cut to length as follows: ¾ inch square and larger, 1.70c; ⅝ inch square and larger 1.80c; ½ inch square and larger, 1.90c; ⅞ to ⅜ inch square and larger, 2.10c; ¼ inch square and larger, 2.20c to 2.30c.

Old Material.—It is expected that certain railroads will put a fair-sized list in the market shortly, mostly from western territory. Business appears to be upon a somewhat better basis.

Prices have not been changed, although they are reported to have less stability than for some time. A fair tonnage of cast scrap was sold during the latter part of last week for $10.50, the conditions of the sale having a great deal to do with the price

According to the summation of reports, we quote prices dealers will pay for the items named below as follows:

Gross Tons

Old iron rails	$12.00 to 13.00
Old steel rerolling	11.00 to 11.50
Old iron axles	18.00 to 18.50
Steel melting scrap	9.50 to 10.25
Car wheels	10.50 to 11.25

Net Tons

Old No. 1 R. R. wrought	$10.00 to 11.00
No. 1 machinery	8.00 to 9.00
No. 1 busheling	8.00 to 9.00
Stove plate	6.25 to 7.00
Machine shop turnings	5.50 to 6.00
Cast borings	4.75 to 5.25
Grate bars	6.00 to 7.00
Sheet iron, bundled	6.75 to 7.75
No. 1 cast scrap	10.00 to 10.50
Heavy turnings	6.00 to 7.00

PHILADELPHIA

More Encouraging Conditions Prevail

Office of THE IRON TRADE REVIEW, Philadelphia, April 9.

Continued improvement is shown in the eastern iron and steel market. Steel works and finishing plant operations are still expanding and eastern production has now mounted to an average of 75 to 85 per cent of capacity. Buyers are more liberally paying the advances in finished lines. The outlook in pig iron is more favorable. Basic has sold at $15, delivered, or 50 cents advance, and standard low phosphorus has scored a similar rise. Sentiment displayed at the monthly meeting of the Eastern Pig Iron Association last week was markedly improved. While March sales were of smaller tonnage, the orders declined by makers at former prices would have considerably swelled the February total. Stocks showed little change. The Virginia Pig Iron Association showed similar cheerfulness.

Pig Iron.—Developments continue to support a more active and firmer pig iron market in eastern districts. Negotiations are plentiful and sales show an encouraging increase, though the furnaces are still acting very conservatively in obligating themselves for the future except at materially advanced levels, because of the uncertainties over coke. Steelmaking metal is still furnishing the heavy tonnage of the market and 30,000 to 40,000 tons for three consumers remains pending. A central Pennsylvania consumer has closed for 4,000 tons of prompt basic at $15, delivered, or 50 cents advance over the last previous sale to that territory. On the basis of freights, this price would be equivalent to about $14.75, delivered in eastern Pennsylvania, though makers generally say they will not accept below the $15 level. Eastern steel makers are now consuming basic at a rapid gait, which will leave them covered for only a limited time ahead and some sizable forward contracting will undoubtedly soon follow. A written inquiry for 6,000 tons for second quarter from a central Pennsylvania consumer, which was previously reported as being tentatively in the market, appeared this week. A Philadelphia steel maker is credited with the purchase of 1,500 tons of Bessemer from a Lehigh valley furnace and this week is inquiring for 1,500 tons of a special analysis Bessemer. Standard low phosphorus iron has been advanced 50 cents to a minimum of $19.50, Philadelphia, or $17, New York furnace. Sales of about 4,000 tons, some of them at the advanced price, are reported. An eastern steel maker has closed for a round block of this grade under trade arrangements. Standard grades of eastern Pennsylvania No. 2X foundry seem firmly established on a minimum of $15, Philadelphia, and some selling is being done at $15.25, or $14.50, furnace. The Pennsylvania railroad has closed on its inquiry for about 4,000 tons of coke and charcoal iron for forward shipment to Altoona, the business going to western Pennsylvania, Lake Superior and southern makers. Virginia makers, who have sold liberally, have advanced to $13. furnace, for No. 2X. On No. 2 plain. $12.50 to $12.75, furnace, is asked. A Virginia pipe shop is inquiring for 5,000 tons. One lot of standard gray forge of 1,000 tons or more has been taken by an eastern Pennsylvania consumer at $14.50, delivered. The Sheridan furnace has resumed and several other merchant interests are considering the increasing of their active capacity.

We quote for prompt and second quarter shipment in Philadelphia and vicinity, as follows:

No. 1X foundry	$15.25 to 15.50
No. 2X foundry	15.00 to 15.25
No. 2 plain	14.50 to 15.00
Standard gray forge	14.25 to 14.50
Basic	14.75 to 15.00
No. 2X Virginia	15.55 to 15.80
No. 2 southern	14.75 to 15.00
Standard low phosphorus	19.50 to 19.75

Coke.—Shortages of coke due to delays in transit have been a disturbing factor with several eastern iron makers. One steel company was obliged to bank two stacks temporarily this week. Such shortages have recently impelled some fancy prices for prompt coke. A sale of 100 cars at $2.85, ovens, is noted. High sulphur coke of low grade sold this week in the east for immediate shipment at $2.10, ovens.

Finished Material.—Increased production is still the order of eastern steel works operations. The Alan Wood Iron & Steel Co. and the Lukens Iron & Steel Co. lighted additional open-hearth capacity this week, and the former is about to blow in its large new blast furnace. A smaller stack now active will retire. Eastern operations on the average now run from 75 to 85 per cent of capacity. One plate maker produced at the rate of 100 per cent of rolled output last week and ran in March on an average of 85 per cent. Pig iron stacks in steel works hands are being cut down sharply.

Orders are numerous and the recent heavy rate of new business is well maintained. Some makers report almost a record number of orders, which are usually small individually. On this small-sized business, makers are having little trouble to firmly maintain 1.20c, Pittsburgh, on plates and shapes and 1.15c on steel bars or 1.35c and 1.30c, Philadelphia, respectively. Attractive tonnages, however, are not so conclusively established at such minimums, for the reason that not a great deal of this class of business is being offered. Eastern bar iron makers are now asking 1.20c, mill, or 1.27c, Philadelphia. Billets, sheets and wire products are firm in the east at former levels. In

billets, some small open-hearth orders have been placed this week with eastern mills by middle western buyers.

Structural lettings are more numerous. A power house for the Virginia Railway & Power Co., Richmond, 600 tons, and two viaducts for the Virginian railway, have gone to the Virginia Bridge & Iron Works. The McClintic-Marshall Construction Co. has received the first section of an extensive steel car shop for the Harlan & Hollingsworth Corporation, Wilmington, Del., which will require considerable tonnage, as yet indefinitely reported. The Belmont Iron Works has about 200 tons for truss work for the Bush and Gunpowder river viaducts, near Baltimore. The American Bridge Co. has finally been formally awarded the Philadelphia stock exchange, 1,600 tons. The Interstate building, Washington, 600 tons, is up this week for bids. Other awards about to be made are 300 tons for an addition to the *Times-Despatch* building, Richmond, and 300 tons for a terminal warehouse, Baltimore. The Cramp ship yard extensions, 1,000 tons, are still pending. The Panama canal commission will take bids, April 16, on its annual budget of iron and steel requirements. The list is not as large as formerly. We quote deliveries at Philadelphia as follows:

Plain structural shapes, 1.30c to 1.35c; tank plates, 1.30c to 1.35c; steel bars, 1.25c; common bar iron, 1.22c to 1.27c; cut nails, 1.65c to 1.70c; blue annealed sheets, No. 10 gage, 1.50c to 1.55c; 4 x 4-inch open-hearth rolling billets, $22.40 to $23.40; forging billets, $26.40 to $27.40. Extras shown under Pittsburgh report.

Ship Building Work.—The Pacific Coast Steamship Co. has placed an order with the New York Ship Building Co. for a passenger and freight steamer, 475 feet in length, to operate along the Pacific coast. The steel requirements, estimated at 4,000 to 5,000 tons, are expected to go to Pittsburgh mills. The pending legislation in congress inimical to the control of steamship lines by railroad interests has apparently minimized the likelihood of an award being made of the large Pacific mail boats. Uncertainty over Panama canal tolls is also delaying some other pending contracts.

Old Material.—Odd lots of first grade heavy melting steel are now bringing $12.50 to $12.75, delivered in eastern Pennsylfania, and the market is firm at this level. Some reports of sales at $13 are to be heard. Borings, of which there has been some buying by the steel makers, are about 25 cents higher. Leading iron mills, however, are not offering over $8.50, delivered. Lebanon railroad wrought and wrought pipe are also up. The market does not show a heavy volume of sales, but its tone is strong. We quote, gross tons, delivered in eastern Pennsylvania and New Jersey consuming territory, as follows:

Old iron rails	$15.75 to 16.25
Old steel rails (rerolling)	13.00 to 13.50
No. 1 heavy melting steel	12.50 to 13.00
Old car wheels	12.50 to 13.00
Old iron axles	22.00 to 23.00
Old steel axles	17.00 to 17.50
No. 1 railroad wrought	15.00 to 15.50
Wrought pipe	12.25 to 12.75
Cast borings	9.25 to 9.75
Machine shop turnings	9.25 to 9.75
Heavy cast	13.00 to 13.50
Malleable	11.00 to 11.50
Stove plate	10.00 to 10.50

Freight rates per ton on scrap from Philadelphia to principal eastern consuming points are: $0.60 to Ivy Rock, Pa.; $0.65 to Phoenixville, Pa.; $0.80 to Coatesville, Pa.; $0.85 to Bethlehem, Pa., Reading, Pa., and Roebling, N. J.; $1.10 to Pottsville, Pa., Lebanon, Pa., and Columbia, Pa.; $1.20 to Harrisburg and Steelton, Pa.; $1.40 to Milton, Pa.

BUFFALO

Heaviest Week of the Year in Pig Iron Sales

Office of THE IRON TRADE REVIEW,
Buffalo, April 9.

Pig Iron.—Buffalo furnaces booked the largest tonnage of any week so far this year, during the week just passed. The total reached between 45,000 and 50,000 tons, mostly in foundry grades for third and fourth quarter requirements, the buyers having reached the point of deciding on purchases for forward shipment. Inquiries to the extent of 12,000 were received. Prices have softened with the reported easement in the coke situation, but if fuel continues to remain high, prices will stiffen and then advance. The furnaces are being crowded to their full capacity and in most cases specifications coming in are in excess of shipments going out. Several furnaces in the district are ready to go into blast, if the market strengthens and the present pressure for iron keeps up. The following range of prices represents the Buffalo market, f. o. b. furnaces:

No. 1X foundry	$14.00 to 14.50
No. 2X foundry	13.75 to 14.25
No. 2 plain	13.50 to 13.75
No. 3 foundry	13.50 to 13.75
Gray forge	13.25 to 13.50
Malleable	13.75 to 14.25
Basic	14.00 to 14.50
Charcoal	15.50 to 17.25

Finished Material. — Specifications are coming in so freely that practically all of the mills have been forced to extend deliveries. Where orders under contract were sent out in 10 days to two weeks last month, deliveries are now extended in many instances to four to six weeks, the makers being worked well up to their capacity. The recent advance has brought out the tonnage. Prices are being held firmly at 1.15c base on bars and at 1.20c base on structural and plates. The volume of inquiry is fair, but the greater percentage of the consumers of the district are covered by contracts, some of which expired on April 1, and their current quarter requirements are now under consideration. Little or no business is being accepted by the mills for delivery beyond July 1 on present prices, producers apparently looking for an additional advance.

The Buffalo Structural Steel Co. was low bidder on the H. O. Co.'s 79 x 121, four-story addition to its Buffalo plant, requiring 250 tons. The State Department of Public Works opens bids this week on five bridges over the Buffalo to Rochester division of the barge-canal. The American Bridge Co. was given the contract for the steel in McCurdy & Norwell Co.'s new building, Rochester, N. Y. Bids were opened this week on the German Roman Catholic Institute, Buffalo, requiring 50 tons; and on Miss Nardin's Academy addition, Cleveland avenue, Buffalo, requiring 100 tons.

Old Material.—The dealers report an improvement in the business of last week over the past few, but the sales were mostly in small lots, making up a considerable tonnage. No large orders were reported placed. The outlook is for a strengthening of prices. We quote for gross tons, f. o. b., Buffalo, substantially as follows:

Heavy melting steel	$12.50 to 13.25
No. 1 railroad wrought scrap	14.00 to 14.25
No. 1 R. R. and mch. cast scrap	13.50 to 14.00
Old steel axles	18.50 to 19.25
Iron axles	22.00 to 22.50
Car wheels	12.00 to 12.25
Railroad malleable, scrap	12.50 to 12.75
Wrought iron and soft steel turn	7.50 to 7.75
Cast iron borings	6.75 to 7.25
Low phosphorus steel scrap	15.75 to 16.00
Old iron rail	15.00 to 15.50
Tank iron	10.00 to 10.25
Boiler plate, sheared	13.75 to 14.25
Pipe and tank	9.50 to 10.00
Stove plate	9.75 to 10.00
Sheet iron	7.00 to 7.50
Locomotive grate bars	11.00 to 11.25

Punxy Furnace Sold

The Iselin interests have purchased control of the Punxsutawney Iron Co.'s blast furnace, Punxsutawney, Pa., from the Rogers Munro interests, which have heretofore had control. L. W. Robinson, president of the Rochester & Pittsburgh Coal & Iron Co., which is also controlled by the Iselin interests, has been chosen president of the new organization.

BIRMINGHAM

Advance in Quotations On Pig Iron by Some Makers

Office of THE IRON TRADE REVIEW,
Birmingham, Ala., April 9.

Pig Iron.—A further advance in quotations has been made by certain local producers, which has proven very effective in closing the tonnage pending at lower figures. No large contracts were entered in the week, but the aggregate of small orders placed is well around 10,000 tons, and a basis of $10.75 per ton at Birmingham, for third quarter shipments, was received in a number of cases. In one instance, a basis of $11 per ton at Birmingham was the price consideration; although, the attendant conditions were to some extent out of the ordinary. For strictly third quarter shipments, a basis of $10.75 per ton at Birmingham is apparently established. One large producer quotes such figures as just mentioned for third quarter shipments only, while another large concern adheres to a basis of $11 for any delivery within the last half. The $10.50 per ton Birmingham schedule is available for deliveries prior to July 1, and tonnage entered for such delivery can probably be made to extend into the third quarter at that price. There is, however, a decidedly smaller tonnage, for any delivery, to be had at figures around a $10.50 schedule, than at the time of last report. The heavy sale for export, recently mentioned, is still without confirmation from local offices, but the movement from furnace yards continues very heavy. Stock reports for April 1 are not in hand. The rate of production has not changed, but with the recent heavy bookings of steel rails and other steel material, it is quite probable that it will be necessary to change certain furnaces now producing foundry iron to basic iron. With such action as just referred to, two additional stacks will probably be blown in on foundry iron during this month. The schedule of prices below is quoted for deliveries prior to July 1, with an advance of 25 to 50 cents per ton over those prices quotable for delivery in the last half:

No. 1 foundry	$10.75 to 11.25
No. 2 foundry	10.25 to 10.75
No. 3 foundry	9.75 to 10.25
No. 4 foundry	9.25 to 9.75
Gray forge	9.50 to 9.75
Mottled	9.25 to 9.50
Standard basic	10.25 to 10.75
Off basic	10.00 to 10.50
Standard charcoal	22.50 to 23.00

These prices are per gross ton f. o. b. cars at Birmingham district furnaces.

Cast Iron Pipe.—Quotations on this material have not advanced, but in view of the improvement in the pig iron market, producers are less disposed to enter advanced deliveries at the figures now ruling. The bookings in the past week consisted largely of small lots for early delivery, while a very liberal volume of specifications against contracts previously entered was received. All local plants are producing a normal tonnage, and have sufficient tonnage on order books for 60 to 90 days' steady operation. We quote water pipe as follows, per net ton, f. o. b. cars here, viz.: 4-inch to 6-inch, $23; 8-inch to 12-inch, $22; over 12-inch, average $21, with $1 per ton extra for gas pipe. Special fittings are quotable at $50 to $55 per net ton at foundry, depending upon extent of requirement and nature of the castings to be furnished.

Old Material. — During the past week, a small tonnage of light cast and wrought scrap was sold to dealers at $8 and $9 per gross ton, respectively, f. o. b. points of loading. A small quantity of old rails was also sold at $9.50 per gross ton to the dealer. The demand from the mills was light comparatively, although forwardings against prevous orders were larger, owing to the receipts at dealers' yards. Nominal quotations are as follows, per gross ton, f. o. b. cars here, viz.:

Old iron axles (light)	$12.50 to 13.00
Old steel axles (light)	11.50 to 12.00
Old iron rails	11.50 to 12.00
No. 1 railroad wrought	10.50 to 11.00
No. 2 railroad wrought	9.00 to 9.50
No. 1 country wrought	6.00 to 6.50
No. 2 country wrought	5.50 to 6.00
No. 1 machinery	8.50 to 9.00
No. 1 steel	8.00 to 8.50
Tram car wheels	7.50 to 8.00
Standard car wheels	9.50 to 10.00
Light cast and stove plate	6.00 to 6.50

Virginia Furnace Activity at Slow Gait

Virginia pig iron production at present is limited to four active stacks, Covington, Princess, Iron Gate and Crozer. The Pulaski and Radford furnaces, which were recently disabled by the caving-in of the lining, are now being relined and will shortly resume. A liberal tonnage of new orders has recently been entered by various Virginia makers and the outlook is favorable for heavier operations.

ST. LOUIS

Round Tonnages of Basic and Malleable Sold

Office of THE IRON TRADE REVIEW,
St. Louis, April 9.

Pig Iron.—Prospects for improvements in the pig iron business are better in the St. Louis territory today than they have been for quite a while. A sale of 10,000 tons of basic and one of 3,000 tons of malleable, all for last half delivery, have been made to local consumers, while 1,000 tons of southern No. 2 soft, for last half, and scattering inquiries for amounts that total about 8,000 tons of various grades and deliveries are pending. The basic price for southern iron has risen to $11 for No. 2, Birmingham, for last half, although it is conceded that one furnace still is quoting $10.50. Other sales are 600 tons of malleable, 500 tons of high silicon, 1,000 tons of southern No. 2 and 3 and 300 tons of northern. The price on northern is now $13.50, Ironton.

Our prices on southern iron, delivered, to which the Birmingham freight of $3.75 has been added, follow:

Southern No. 1	$15.25
Southern No. 2	14.75
Southern No. 3	14.25
Southern No. 4	13.75

Coke.—The demand for quick shipment of coke in small quantities remains active, and difficulty is still had in obtaining cars. No orders for large tonnages are reported. Our quotations remain as follows:

We quote 72-hour Connellsville foundry grades, $2.50 to $2.65 for second quarter of 1912; 72-hour foundry, $2.25 to $2.50 on tracks and $2.75 to $2.85 for immediate delivery; 48-hour Connellsville furnace, $2 to $2.25; best 72-hour Virginia foundry, $2.50 to $2.75; 48-hour Virginia furnace, $2 to $2.25. The freight to East St. Louis and St. Louis is $2.80, and $2.70 from the Virginia fields when shipment is destined beyond St. Louis.

Finished Material. — The Wabash Railroad Co. is asking for bids on 2,000 to 3,000 tons of bridge material for future delivery, and contracts have been let to the Stupp Bros. Bridge & Iron Co., of Carondelet (St. Louis), for 250 tons of structural steel for two bridges for the drainage canal on the Illinois side of the Mississippi river,

opposite St. Louis. Steel bars are firm at 1.15c, Pittsburgh, and plates and structural material at 1.20c, Pittsburgh, with demand good for specifications. The bar iron market remains stationary at 1.20c to 1.25c, St. Louis.

Old Material.—With bars stationary and not very active, scrap iron has advanced 25 cents a ton all along the line, although no large sales have been reported. Our quotations follows:

Gross Tons

Old car wheels	$13.50 to 14.25
Old iron rails	15.25 to 15.50
Re-rolling rails (5 ft. and over)	13.25 to 13.75
Old steel rails (3 ft. and under)	12.25 to 13.25
Light section relayers (45 lb. and under) subject to inspec.	21.50 to 22.50
Re-laying rails, subject to inspec.	22.50 to 23.25
Frogs, switches and guards	10.50 to 11.25
Heavy melting steel	11.50 to 12.25
Shoveling steel	10.75 to 11.25

Net Tons

No. 1 railroad wrought	$11.50 to 12.00
No. 2 railroad wrought	10.50 to 11.00
Arch bars and transoms	14.25 to 14.50
Knuckles, couplers and springs	10.50 to 11.00
Shafting	14.00 to 14.50
Iron car axles	18.50 to 19.00
Steel car axles	16.00 to 16.50
Locomotive tires	11.50 to 12.00
No. 1 country wrought	9.25 to 9.75
Pipe and flues	8.50 to 9.00
Tank iron and cut boilers	7.50 to 8.00
No. 1 cut busheling	9.25 to 9.75
No. 2 cut busheling	6.35 to 7.55
Cast and mixed borings	6.25 to 6.50
Machine shop turnings	7.00 to 7.25
Railroad malleable	10.50 to 11.00
Agricultural malleable	9.50 to 10.00
Stove plates	9.50 to 10.00
Angle splice bars (iron)	11.25 to 12.00
Angle spice bars (steel)	9.50 to 10.00

NEW YORK

Large Buyers Place Pig Iron Orders Freely

Office of THE IRON TRADE REVIEW, 1115 West Street Bldg., April 9.

Iron Ore.—Some additional sales of lake and eastern ores have been made to eastern furnaces, but those of the former particularly have not reached any impressive tonnage. Considerable lump ore is being sold at prices which net the mines from 50 cents to $1 a ton less than last year. Port Henry interests are now practically sold up on their season's output of ore. Little foreign ore is being offered or sold at present. The eastern market hears reports of further price concessions on lake ores, but these usually apply to special material or to ores not fully up to guaranteed standard in analysis.

Pig Iron.—Large buyers continue to appear freely in the market and some round tonnages have been closed for forward shipment to various plants through the New York offices of these interests. A pump builder which has been in the market for a week or ten days has closed for 10,000 tons or more of foundry grades for shipment to its various plants east and west and is still negotiating for 4,000 to 5,000 tons for eastern delivery. A soil pipe maker has added 3,000 to 4,000 tons of No. 2 plain to recent purchases for a New Jersey plant, bringing the total of iron bought to about 10,000 tons. A railway equipment builder is in the market for 5,000 to 6,000 tons and may considerably increase this amount on final action. Large eastern malleable consumers continue to sound the market for a block of 10,000 tons or more. A New Jersey builder of hoisting equipment has taken about 1,500 tons of No. 2X and a good volume of smaller business is being done. Eastern buyers this week closed for about 3,000 tons of charcoal iron. Eastern Pennsylvania makers are holding quite firmly on an average basis of about 25 cents higher. This is especially true with respect to the standard grades of Lehigh and Schuylkill valley irons, which are firmly quoted at $15 to $15.25, tidewater, for No. 2X. Some reports of former low prices in eastern Pennsylvania are still to be heard, but these are confined to one or two makers. There has been an active movement of Buffalo iron and one seller there disposed of more than 25,000 tons in the week. One sale of 5,000 tons of foundry iron was made. Recent low prices in the Buffalo district have apparently disappeared and the market is now quotable there at from $13.50 to $14, furnace, for No. 2X. Some sales of Buffalo iron have been made to the metropolitan district for water shipment upon which charters have been made at about $1.35. We quote for prompt and second quarter shipment, as follows, southern and Virginia iron being given at New York docks:

Northern foundry No. 1	$15.20 to 15.45
No. 2X foundry	14.85 to 15.25
No. 2 plain	14.50 to 14.75
No. 2 Virginia	15.55 to 15.80
No. 2 southern foundry	14.50 to 14.75
Malleable	15.25 to 15.50
Gray forge	14.25 to 14.50

Ferro-Alloys. — Recent arrivals of several cargoes of ferro-manganese and the better prospects for the restoration of normal labor conditions in England have resulted in the easier condition in prices. Ferro-manganese is now being offered for forward shipment at the former price of $41, seaboard, and some large buyers have closed within the week upon this basis. Prompt ferro still brings some premium, but this has settled down in most cases to $1 to $2. Inquiry is only fair. In 50 per cent ferro-silicon, some carload lots are under negotiation. We quote standard English 80 per cent ferro-manganese at $41, seaboard, and 50 per cent ferro-silicon at from $68 to $72, Pittsburgh.

Cast Iron Pipe.—Some leading makers declare the present market in cast iron pipe is the most active in five years. Private gas and water companies, particularly, are buying freely. The pressure of delayed requirements and the more favorable conditions for marketing bonds, are given as the causes for the present movement. New Bedford, Mass., will close April 16 on 3,500 tons. New York City will shortly put out additional tonnage for high pressure lines. Some makers are advancing prices but in other directions, low quotations are still being made. We quote 6-inch pipe at from $21 to $22, f. o. b. New York, in carload lots.

Finished Material. — Tonnage from specifications against running contracts and from some new buying continues to come to the mills on a heavier scale and operations are still in the ascendency. In the eastern district, the mills are entering a larger tonnage for rolling and have their steel works capacity more fully engaged than at any time for the past six months. With the large tonnage under contract and being freely taken out, there is less inducement for the mills to make concessions for the miscellaneous new business now appearing and prices appear to be holding quite firmly to 1.15c, Pittsburgh, on steel bars and to 1.20c, Pittsburgh, on plates and shapes, or 1.31c to 1.36c, New York, respectively.

New York subway contractors who have placed about 50,000 tons with the American Bridge Co. for proposed extensions during the past several months, are now beginning to specify on a liberal scale against these contracts. Orders for all the work let are expected to be in the hands of the shops within

the next several months. The O'Rourke Engineering Construction Co., the general contractor for section 2A of the Lexington Avenue subway, has just placed the 1,600 tons of steel required with the American Bridge Co.

The Delaware, Lackawanna & Western railroad has finally decided to use concrete instead of steel construction for its Martin's Creek and Tunkhannock viaducts near Scranton. The steel bar requirements will be about 2,400 tons. Had the steel design been adopted, it is estimated that 15,000 to 20,000 tons would have been needed. The Atlantic Coast Line has awarded 1,200 tons of bridge work to the Pennsylvania Steel Co., and the Pennsylvania railroad 400 tons to the same interest for a jump-over bridge at Colonia, N. J. The Mt. Vernon Bridge Works has 300 tons of bridge work for the Baltimore & Ohio on the Wheeling division. L. S. Shoemaker & Co. have a small tonnage for electric traction bridges in New England. The railroad tonnage under negotiations in the east is light.

Levering & Gerrigues have 1,300 tons for a warehouse on Eleventh avenue, this city. The Hinkle Iron Works has taken 750 tons for the German hospital at East Seventy-sixth street and Park avenue, 700 tons for an apartment at Fifty-fourth street and Seventh avenue and 400 tons for an abattoir, First avenue and Forty-third street. Bids have gone in for 1,600 tons for a new grand stand for the Brooklyn baseball park, and on 1,200 tons for an addition to the Bossert hotel, Brooklyn. Plans are out for a 17-story apartment for the Arron Building Co. at Seventy-ninth street and Park avenue to require about 1,500 tons. Plans for the Biltmore hotel, to be erected on the New York Central Terminal site will be before the trade by the end of the present month. It is reliably estimated that the steel requirements will be 13,000 to 14,000 tons. The Cambria Steel Co. has 400 tons for a boiler house for the Metropolitan Art Museum and L. S. Shoemaker & Co., 250 tons for an erecting shop for the L. A. Woods Machine Co., in South Boston. The American Car & Foundry Co. is inquiring for 3,000 tons of shapes for car work recently taken. We quote, delivered at New York tidewater, as follows:

Plain structural shapes 1.31c to 1.36c; tank plates, 1.31c to 1.36c; steel bars, 1.26c to 1.31c; common iron bars, 1.25c to 1.30c; plates and shapes from store, 1.70c to 1.80c; extras as shown under Pittsburgh report.

Old Material.—Two eastern steel works which have been freely buying heavy scrap recently have increased their purchases to about 15,000 tons. The price paid was $12.50, delivered. The United States Steel Corporation has purchased about 3,500 tons additional for eastern plants, including 3,000 tons of detinned scrap for its Pencoyd works at $11.50, delivered, and about 500 tons of girder rails for Worcester, Mass., delivery at about the same price. Indications in the market suggest higher prices and holders of scrap are less inclined to sell. We quote gross tons delivered at New York tidewater as follows:

Old car wheels	$11.25 to 11.75
Old iron axles	16.25 to 16.75
Old steel shafting	14.00 to 14.50
No. 1 heavy melting steel	10.25 to 10.50
No. 1 R. R. wrought	12.75 to 13.00
Wrought pipe	9.50 to 9.75
Cast borings	6.25 to 6.75
Mach. shop turnings	7.00 to 7.25
Heavy cast	10.75 to 11.00
No. 1 machinery cast	11.25 to 11.50
R. R. malleable	9.50 to 10.00
Stove plate	8.25 to 8.75
Grate bars	6.75 to 7.00

Freight rates on scrap per ton to Steelton, Pa., Columbia, Pa., Pottsville, Pa., and Harrisburg, Pa., are $1.50 from Jersey City and $2.00 from New York; to Coatesville, Pa., Ivy Rock, Pa., Phoenixville, Pa., and Reading, Pa., $1.50 from Jersey City and $1.80 from New York; to Bethlehem, Pa., $1.10 from Jersey City and $1.60 from New York; to Roebling, N. J., $1.00 from Jersey City and $1.50 from New York; to Milton, Pa., $1.60 from Jersey City, and $2.00 from New York.

BRITISH MARKET

Rush to Get Foreign Steel

Birmingham, Eng., April 8. (By cable.)—Coal pits will recommence operations Wednesday. Every sign of a pig iron famine is at hand and no coke can be had for the next fortnight. Cleveland pig iron is 4s dearer, and there is no pig iron to be had from Derbyshire, Northamptonshire, Lincolnshire or Staffordshire. Makers decline to quote.

It is impossible to get finished steel at any price. Urgent inquiries are being sent to Germany, Belgium and America, especially in view of the very low freight rates.

Office of THE IRON TRADE REVIEW, Prince's Chambers, Corporation St., Birmingham, Eng., March 31.

Pig Iron.—A report on the British iron trade just now is strongly suggestive of that famous chapter in a celebrated book of natural history dealing with snakes in Ireland. The chapter consisted of four words, "There are no snakes!" Practically, there is no British iron industry. It is commonly estimated that the iron and steel industry consumes 30,000,000 tons of coal per annum, and it takes three tons of coal to make a ton of finished steel. As the largest coal consuming industry, the iron and steel trade has been most severely hit by the coal strike and it is estimated that at present 250,000 men are out of work. The spring trade in the Cleveland iron district has been practically ruined, and this is the more galling because the earlier promise was equally for record production and sale. The Cleveland district has been stopped, both through lack of coal and for want of iron ore which, at an early stage in the dispute, the railways refused to carry. There is not a ton of Cleveland iron being made, a condition of things only once before experienced. But there are still good shipments of pig iron,—a large quantity from makers' hands as well as from the public stores. The stocks have been reduced by 49,000 tons this month, making a reduction of 140,000 since the autumn. This is the largest decrease for five years, and a larger sale is expected in the immediate future. The heavy shipments are partly encouraged by the very low freights, resulting from the extensive idleness of cargo boats. With regard to Cleveland prices, selling figures have shown a marked improvement, Cleveland warrants being now 51s 6d ($12.36), with 51s 9d ($12.66) one month, and the amount in store is 470,000 tons. It will take some time to restore the normal rate of production, owing to the fact that coke supplies have for some time been very low and are likely to be so for weeks after the general resumption of the pits.

Finished Iron and Steel.—The full effects of the coal strike are now being experienced, as all the iron and steel works are idle, equally in Scotland, the Middlesborough district, Barrow-in-Furness, Staffordshire, Cumberland and Wales. Some of the leading firms have opened relief centers, distributing relief both in money and food to workmen and their families. To a surprising extent, the ship yards have been kept in operation, but this is because most of them had accumulated a fair stock of plates and angles, which they have been able to use. All the mills producing this material have now heavy arrears of orders, and there will be a great clamor for the products of the mills.

COMMERCE COMMISSION

Claims Jurisdiction Over Interstate Trade on Lakes.

New Hibbs Bldg.,
Washington, April 8.

Considerable confusion appears to exist regarding the authority of the Interstate Commerce Commission to regulate traffic on the great lakes. An interpretation of the law, and the authority of the commission was obtained today from a member of the Interstate Commerce Commission.

Where water lines are engaged in interstate traffic and the freight is not transported partly by rail, the commission has no authority over the water line and the interstate law does not apply to the water line.

If, however, the freight is hauled partly by water and partly by rail, the commission has jurisdiction and can fix the rate and fix the proportion each transportation company receives.

With regard to the dock charges the position of the commission is this: The docking service is performed by the railroad. Where a water line has filed rates and agreed to through billing, the entire rate (including the docking charge) is one that can be fixed by the commission and the proportion allowed for dock service can be determined by the commission.

The following memorandum was issued by the Interstate Commerce Comission today:

Upon inquiry, *Held*, that if a rail carrier and a water carrier separately publish and file their rates applicable to through shipments, traffic over such route may be lawfully transported under through bills of lading, even though the rates are not joint through rates.

Held further: That a water carrier may not lawfully accept shipments for transportation on through bills of lading issued by a rail carrier unless the water carrier has lawfully published and filed rates applicable thereto.

Held further: That acceptance by a water carrier of through traffic on through bills of lading issued by a rail carrier is an evidence of an arrangement for continuous carriage which subjects the traffic to the provisions and jurisdiction of our act.

Held further: That it is not lawful for a rail carrier to issue through bills of lading under an arrangement with a water carrier for continuous carriage when the water carrier has no rates lawfully published and filed applicable to such transportation.

Commissioner Lane, when asked the effect of the holding, said that when a water carrier published its rates and made a through holding arrangement with a railroad, it placed the water carrier under the jurisdiction of the commission, which gave that body authority to determine the reasonableness and legality of the rate. Unless a water carrier makes a joint rate with a railroad, the interstate commerce law does not apply to the water carrier, although the latter is engaged in interstate traffic.

The effect of the policy of the commission will be to bring a large number of water-transportation lines within the jurisdiction of the commission.

HEARTY GREETING

By Cleveland Chamber of Commerce To Chas. M. Schwab.

Charles M. Schwab, president of the Bethlehem Steel Corporation, was the guest of honor of the Cleveland Chamber of Commerce at luncheon at noon Tuesday, April 9. The popularity of Mr. Schwab was attested by the very large attendance. Over 700 were seated at the tables and 150 members were unable to obtain seats. Charles E. Adams, president of the Cleveland Hardware Co., and also of the Chamber of Commerce, presided, and presented Mr. Schwab, who talked briefly, interspersing his remarks with a number of anecdotes of Capt. Bill Jones and other notables of the trade. Mr. Schwab's subject was, "The History and Development of the Steel Business of America and the Present Legislative Attitude toward the Industry as Affecting Its Further Development and Ultimate Success." In referring to the wonderful progress which had been made in the period from 1880 to 1900, when the production of steel by England stood at 5,000,000 tons, while that of Germany increased from 2,000,000 to 12,000,000 tons and that of the United States from 1,000,000 to 25,000,000 tons, Mr. Schwab happened to notice S. T. Wellman in the audience. "No man," said he, "did more than my good friend Wellman, whom I see before me, to advance the manufacture of steel. No name will live longer than that of Wellman." This spontaneous and hearty tribute was received with an enthusiastic burst of applause.

Mr. Schwab said that the cost of manufacturing steel may be divided roughly into three parts, one-third labor, one-third transportation and one-third numerous fixed charges. He said that although steel today is selling at the lowest price in its history, labor is obtaining the highest remuneration. "If," he said, "the Steel Corporation were paying today the same wages that it paid in 1900, it would pay out this year $30,000,000 less in wages than it will under the present schedules."

Mr. Schwab described the progress which had been made in the manufacture of steel and explained how it became necessary for steel manufacturers to acquire iron ore mines, railroads and steamships. He said that any legislation which tends to destroy the present economical methods and makes it impossible for manufacturers to operate mines and means of transportation would result in great damage to the business and could not remain permanently on the statute books. "This country," he said, "will develop in spite of agitation. We go to extremes in the United States and the great popular outcry cannot be immediately stopped, but the revulsion of feeling will come and the conservative but progressive business men of the nation will have their day and their influence will be felt to a far greater extent than it is at the present time."

In conclusion, Mr. Schwab pleaded guilty to being something of a sentimentalist in business. He said that he believed there is something more in business life than mere cold blooded dealing. With much feeling he expressed his appreciation of the hearty reception which had been tendered him:

Seated at the "pig iron table," were the following members who were guests of Rogers, Brown & Co.:

V. M. Moore, the Chisholm & Moore Mfg. Co.
J. C. Brainard, Johnston & Jennings Co.
R. J. Frackelton, Chandler & Price Co.
John H. O'Brien, Cleveland Co-operative Stove Co.
Willard N. Sawyer, Wellman-Seaver-Morgan Co.
W. D. Sayle, Cleveland Punch & Shear Works Co.
George Smart, editor The Iron Trade Review.
Lyman H. Treadway, Peck, Stow & Wilcox Co.
B. F. Wade, Taylor & Boggis Foundry Co.
W. C. Bruce, Bruce-Macbeth Engine Co.
A. M. Ober, Ober Mfg. Co., Chagrin Falls, Ohio.
D. T. Croxton, Cleveland Furnace Co.
S. W. Croxton, Cleveland Furnace Co.
S. W. Hubbard, resident manager, Rogers, Brown & Co.
C. B. Smith, secretary, Cleveland Furnace Co.

The Trussed Concrete Steel Co., Detroit, advises that the report of a certain part of its office being moved to Youngstown, O., gives the wrong impression. The change made was the transferring of three of the men connected with the company's steel sash department from the main office in Detroit to the office at the works in Youngstown.

ON TIMELY TOPICS

Will National Metal Trades Speakers Talk at Annual Convention.

The fourteenth annual convention of the National Metal Trades Association was called to order at the Hotel Astor, New York, this morning. The attendance was large, and although the program calls for business sessions on only one day, many matters of interest to the association will be taken up and carefully discussed.

The program prepared calls for addresses from some of the men identified with the association as well as three other speakers of national repute, who will address the members at the convention banquet to be held at the Hotel Astor. These speakers are Hon. Franklin MacVeagh, secretary of the treasury; Hon. C. E. Littlefield, of New York, and Hon. W. Morgan Shuster, formerly treasurer general of Persia.

The first report will be that of F. C. Caldwell, of H. W. Caldwell & Son Co., president of the association. He has been a member of the administrative council for a number of years and his report will embody both his experience as an officer of the association and the practical views of a manufacturer.

Howard P. Eells, of the Bucyrus Co., treasurer of the association, will report on the finances of the organization, showing that it is in better condition today than at any previous time in its history. This healthy financial condition prevails despite the increased activities of the association during the past year.

A number of papers will be read today on matters of timely interest to members. Henry D. Sharpe, of the Brown & Sharpe Mfg. Co., and vice chairman of the committee on systematic compensation for industrial accidents, will report on that phase of the association's work. F. A. Geier, of the Cincinnati Milling Machine Co., chairman of the committee on industrial education, will make a report. William Doolittle, safety inspector, will talk on "Safety Appliances", with stereopticon illustrations. Practical suggestions will be made on accident prevention. Hon. J. J. Feeley, Boston, Mass., will present a paper on "How Far Must Business Yield to the Demands of Industrial Combinations?" Miles M. Dawson, an eminent New York actuary, who has made a life study of insurance, will discuss "What Has Been Done Up to the Present Time and is Now Doing in Employers' Liability and Workmen's Compensation."

The banquet will be held at 7 o'clock this evening and with the list of prominent speakers, is expected to prove one of the most interesting ever held by the association.

A tea for the wives and daughters of the members, who are in attendance at the convention, has been arranged for this afternoon at the Hotel Astor.

REPORT ADVERSE

To Underwood Bill Presented by Senate Finance Committee.

The finance committee of the senate, which has been considering the metal schedules of the Underwood bill, filed an adverse report last Friday. The report was made by Chairman Boies Penrose, of Pennsylvania.

Representatives of 245 industrial concerns, located in 18 different states, appeared before the committee during the hearing and protested against the enactment of the measure that was rushed through the lower branch of congress. Organized labor also sent representatives to protest against the passage of the bill and delegates from 225 machine tool manufacturers informed the committee that the passage of the bill would mean the closing down of their factories.

The report sharply criticizes the haste with which the bill was rushed through the house, and emphasizes the fact that the ways and means committee of the house held no hearing to ascertain whether there was a necessity for revision of the steel schedule. On this point the report says:

The committee is of the opinion that a general revision of the metal schedules, not based upon the most accurate, definite and positive information to be obtained, will be dangerous. On many articles covered by this schedule any reduction whatever will go below the difference in cost of production at home and abroad. The rates of duty covered by the bill vary from 5 to 35 per cent ad valorem.

Continuing, the report declares that the committee on ways and means submitted a table estimating the annual imports under the bill at approximately $77,952,000 in value and the annual revenue $17,477,640, and adds:

This estimate would indicate an average rate of duty of 22.42 per cent, an average reduction of approximately 30 per cent from the present rate. So radical and unreasonable a reduction must result in either forcing our manufacturers to reduce the wages of their employes or to close their factories. The industries to be affected by a change in these schedules are among the most important in the United States and a reduction in the rates of duty as proposed must cause a repetition of the conditions existing after the enactment of the Wilson-Gorman act, and an even more serious condition would appear probable since the rates of duty upon metals and manufactures thereof in the present law are lower than those carried in the Wilson-Gorman act.

Further criticism of the bill is found in the fact that several paragraphs are made subject to ad valorem duties. It is pointed out that practically every civilized country has favored and adopted, when possible, specific rates of duty upon imported merchandise and that every secretary of the treasury, from Hamilton to MacVeagh, with one exception, has advocated specific rates of assessment.

Attention is called to the fact that the tariff board has not yet made its recommendation upon the metal schedules and that the report of the board on the wool schedule was comprehensive and exhaustive. The report concludes:

Your committee submits therefore, that the enactment of this bill would be ill-advised and most unfortunate legislation. It would reduce the measure of protection below the margin of safety and tend to destroy one of our most important industries, opening wide our domestic markets to foreign steel and iron products. It is not only unprotective, but also fails as a revenue measure, as it would result in a deficit for which no provision is made; it is not based upon open hearings or upon any investigation of manufacturing conditions, labor cost, or other facts known to be necessary; it is not responsive to any need or necessity for a general revision of the present schedule C and should not, therefore, be enacted.

Settlement Proposed to Dreifus Creditors

Emanuel Dreifus & Co., Philadelphia iron and steel merchants, which recently asked for an extension from their creditors, have made a proposition of settlement to the committee representing the outstanding claims against the firm. This provides for a 25 per cent payment in cash, 25 per cent additional in 60 to 90 days from funds to be realized from bills receivable, and 25 per cent in two years. The latter payment is unsecured. The creditors' committee has not yet acted upon the proposal, but it will probably accept.

Recent sales made by the New York office, at 42 Broadway, of the Alliance Machine Co., Alliance, O., include two 15-ton electric cranes sold to the Farrell Foundry & Machine Co., Ansonia, Conn., and two 10-ton cranes to the Bethlehem Steel Co.

METAL MARKETS

Rise in Tin—Copper Figures Favorable

New York

April 9.

Tin.—The important event of the past week is the resumption of general manufacturing plants in the British territory affected by the coal strike, following the reopening of the mines. The immediate effect was a rise in the London pig tin market of about £2 when that market opened today after being closed over the Easter holidays since April 4. Final quotations of spot and three months tin today were £198 15s and £194 15s respectively. In the local market prices have kept close to parity with foreign cables. Spot tin is held at 43.50c and April is slightly higher at 43,62½c. Arrivals have been ample to meet a normal demand from consumers, and the outlook for fresh supplies during the remainder of the month is good. Since April 1, 2,835 tons have arrived at Atlantic ports, and there are 2,260 tons afloat.

Copper.—The report of the Copper Producers' Association reached the trade today, and increased the favorable sentiment among sellers. Production in March amounted to 125,894,801 pounds. Deliveries into domestic consumption aggregated 67,487,468 pounds compared with 56,228,368 in February, and shipments for export amounted to 58,557,566 pounds, against 63,148,096 pounds for the previous month. The falling off in the latter item is explained by the unsettlement in the British manufacturing trade caused by the shut down of the coal mines. Consumers have bought lightly the past week, but it is expected that the demand will become more active now that the official statistics are known. Electrolytic is held at 16c delivered 30 days by all important sellers. Lake is 16c to 16.12½c and casting is 15.87½c.

Lead.—Most consumers of lead appear to be well supplied for the present, and normal quietness prevails. Independents continue to ask 4.37½c. in New York for the metal and the American Smelting & Refining Co., 4.20c in New York.

Spelter.—The market is quiet and prices firm. Sellers anticipate an accumulation of requirements due to deferred buying, that will care for such increase in stocks as is likely to occur at refineries. Prime western is held at 6.70c in New York for April delivery, and 6.55c for May.

Antimony. — Demand is somewhat better, and prices are firm. Cookson's is 8c, Hallett's is 7.75c and Hungarian is 7c.

American Steel Foundries Buys Basic

Pittsburgh, April 10. (By wire.)—The American Steel Foundries has closed for 10,000 tons of basic pig iron for last half delivery at $13, valley. A sale of No. 2 foundry, approximating 10,000 tons, is reported today at $13.50, valley. Malleable aggregating 2,500 tons sold at $13.25, valley, for Pittsburgh delivery. Some small sales of basic have been closed at $13.25, valley.

Rail Order Placed

New York, April 10. (By wire.)—The Norfolk & Southern has placed an order for 21,000 tons of Mayari Bessemer rails with the Maryland Steel Co. The Atlantic Coast Line has placed 2,000 freight cars with the Mt. Vernon Car Mfg. Co.

Will Enlarge Plant

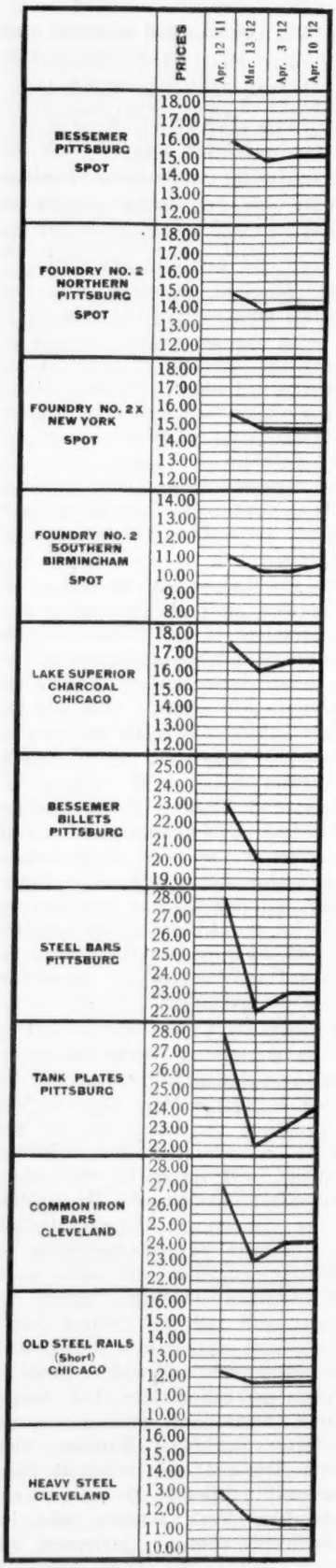
Pittsburgh, April 10. (By wire.)—Stockholders of the Pittsburgh Steel Foundries voted yesterday to increase their capital stock from $400,000 to $1,000,000 and to change the name of the corporation to The Pittsburgh Steel Foundries Co. Plans are under consideration for the enlargement of their plant at Glassport, Pa.

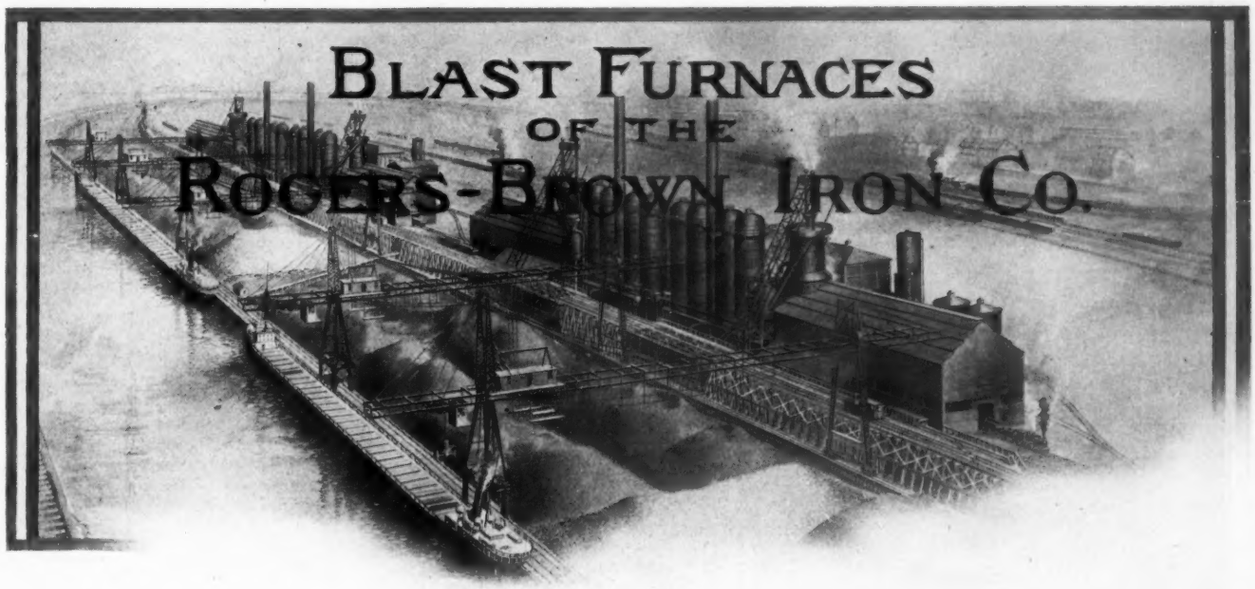
Decrease in Unfilled Orders

New York, April 10. (By wire.)—The report of the United States Steel Corporation for the month of March shows unfilled orders, as of March 31, of 5,304,841 tons, as compared with 5,454,200 tons, as of Feb. 29, a decrease of 149,359 tons.

The shareholders' committee of the Bon Air Coal & Iron Co. has issued a communication to shareholders urging them to participate in a plan recently formulated for the re-organization of the company. The committee is composed of Judge J. M. Dickinson, P. D. Madden and Edgar Jones. So far only six stockholders have declined to agree on the new organization.

PRICE CHART





A Description of the Two New Stacks, Nos. 3 and 4

As an iron and steel producing center, Buffalo continues to grow in importance. Recently, the merchant furnace producing capacity of that district was further augmented by the completion of stacks Nos. 3 and 4, which have been added to the Susquehanna plant of the Rogers-Brown Iron Co. Furnace No. 3 was blown-in on Feb. 5 and No. 4 is now ready for the torch. In April, 1910, the Rogers-Brown Iron Co. acquired by merger the two blast furnaces at Buffalo, formerly owned and operated by the Buffalo and Susquehanna Iron Co., known as Susquehanna furnaces, Nos. 1 and 2, and the erection of two additional stacks was undertaken immediately thereafter. The plant now has an annual producing capacity of 450,000 tons of foundry, basic and Bessemer iron, for which Rogers, Brown & Co. are the sales agents.

In recent years, the tendency among producers of merchant pig iron has been toward the control of the raw material supply and the transportation facilities for shipping the iron ore from upper lake ports to the furnace docks. In this respect, the Rogers-Brown Iron Co. is a self-contained iron producing unit. In addition to its extensive iron ore properties, this company controls three 10,000-ton ore carriers, the S. M. Clement, W. C. Agnew and Hugh Kennedy, which are engaged almost exclusively in the transportation of ore for the Susquehanna plant. The iron ore properties of the Rogers-Brown Iron Co. include the Susquehanna mine on the Mesabi range at Hibbing, Minn., from which 300,000 to 500,000 tons of ore will be taken by steam shovel this year and in 1913 the season's output will be increased to 1,000,000 tons. Throughout 1911, stripping operations were conduct-

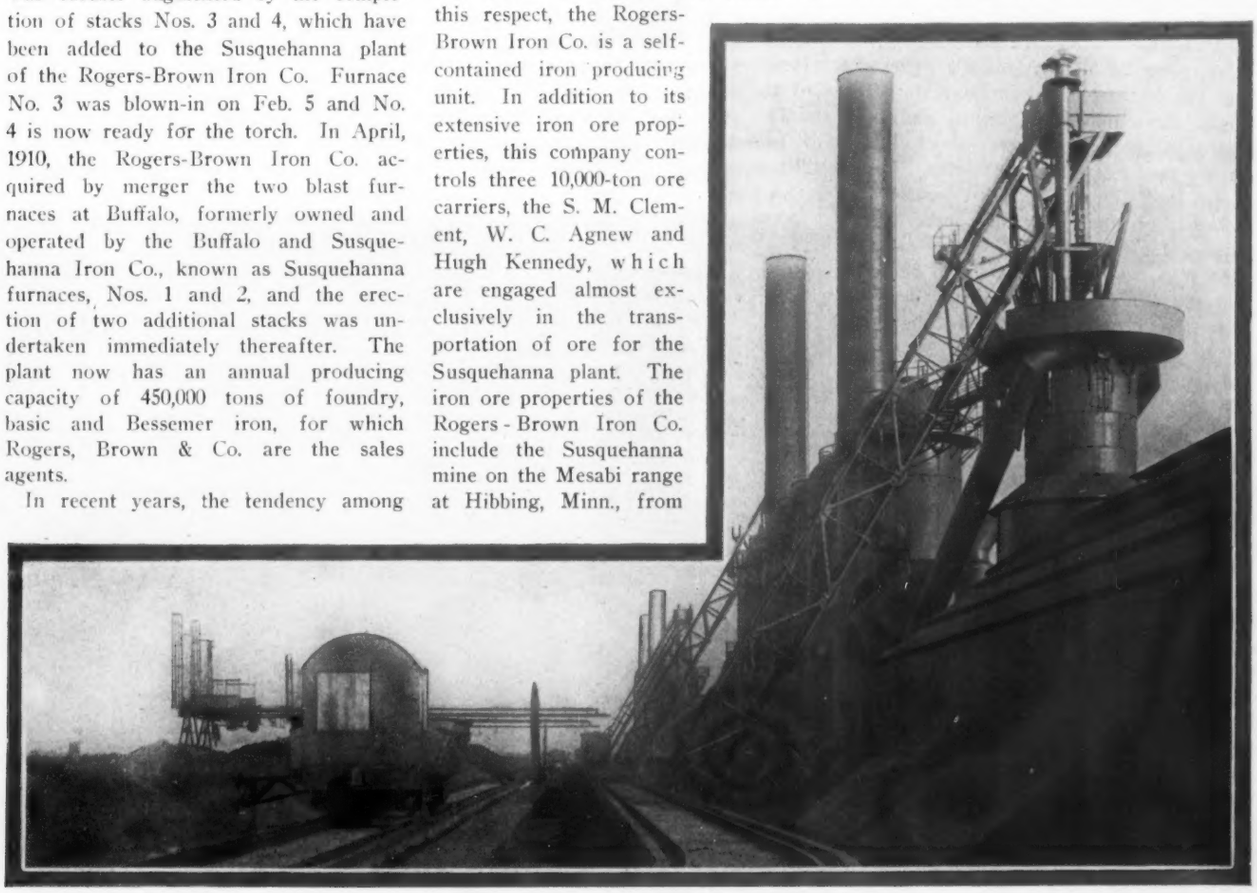


FIG. 1—BLAST FURNACE PLANT OF THE ROGERS-BROWN IRON CO., BUFFALO, SHOWING NEW STACKS, NOS. 3 AND 4, IN THE FOREGROUND

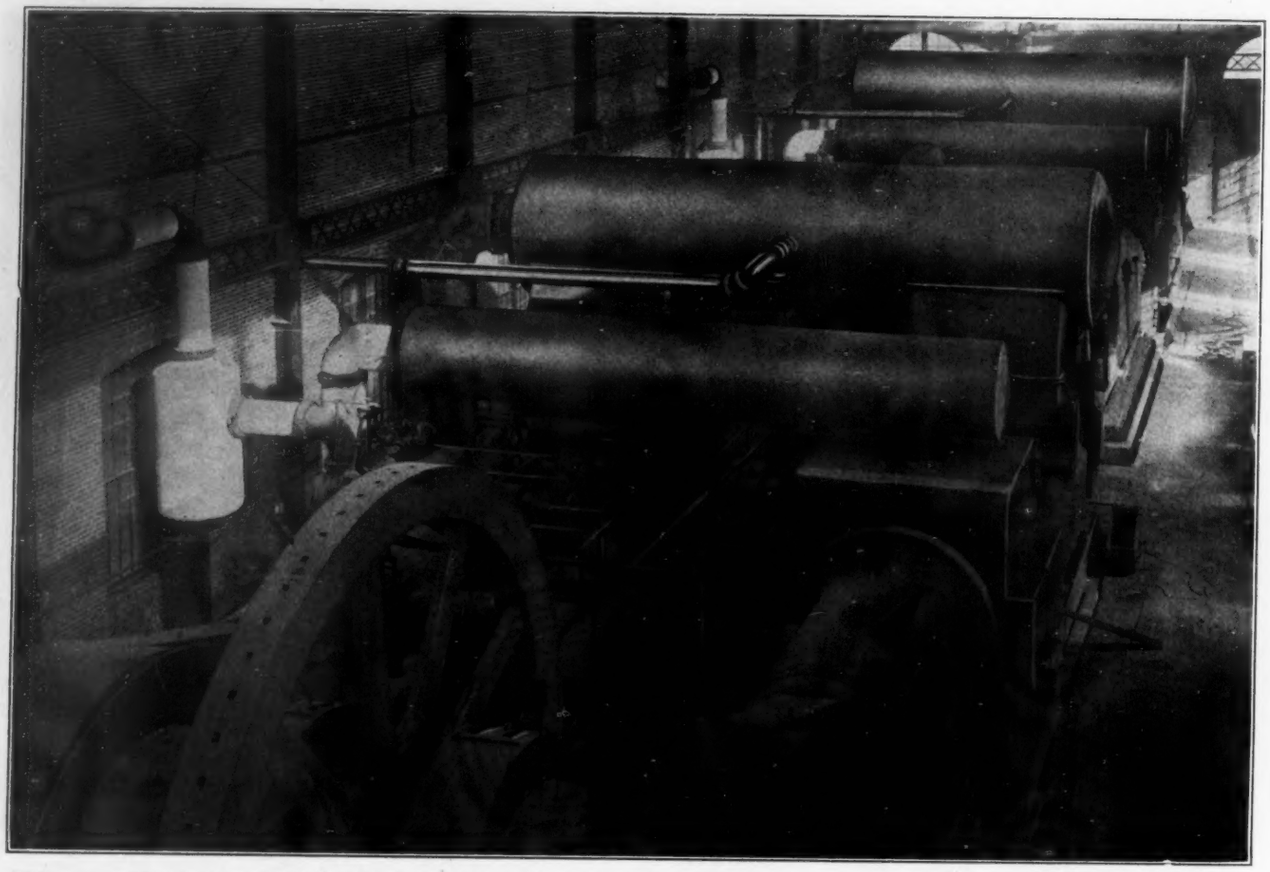


FIG. 2—A VIEW IN THE ENGINE HOUSE, SHOWING THE THREE HORIZONTAL CROSS-COMPOUND BLOWING ENGINES

ed on two forties of this property, the ore lying at depths varying from 100 to 140 feet from the surface. In Michigan three mines are owned and operated in the Iron River district, known respectively, as the Hiawatha, Rogers and the Chicagoan. Last season the output of the Hiawatha mine aggregated 155,000 tons and Chicagoan 110,000 tons, while the Rogers will be added to the list of producers late this year. On this property a concrete shaft, 120 feet deep, already has been sunk, and it is estimated that the annual yield from this mine will total 200,000 tons. At Norway, Mich., the Monro mine, an open pit of siliceous ore, also is operated, the annual output varying from 25,000 to 50,000 tons.

Ore Dock

The site upon which the four Susquehanna furnaces are built comprises approximately 84 acres. A canal, 3,000 feet long, 200 feet wide and 23 feet deep, opening directly into Buffalo harbor, parallels the entire length of the property. Between the furnaces and the canal is the ore dock which is of sufficient size to berth three 600-foot ore carriers at one time. The dock is equipped with five 225-foot span, Brown ore bridges, which also serve the furnace bins and the ore storage. The yard has a capacity of 600,000 tons of ore, which is sufficient to supply the furnaces from the close to the opening of the navigation season.

The two new furnaces, Nos. 3 and 4, have a daily capacity of approximately 350 tons each. They were built from designs made by Julian Kennedy, Pittsburgh, and are 85 x 21 feet. The stoves and stacks have been arranged on a continuation of the center line of furnaces Nos. 1 and 2. By this layout, space was considerably economized and

FIG. 3—BOTTOM VIEW OF THE PARABOLIC ORE, COKE AND LIMESTONE BINS, SHOWING ONE OF THE ELECTRICALLY-OPERATED LARRIES

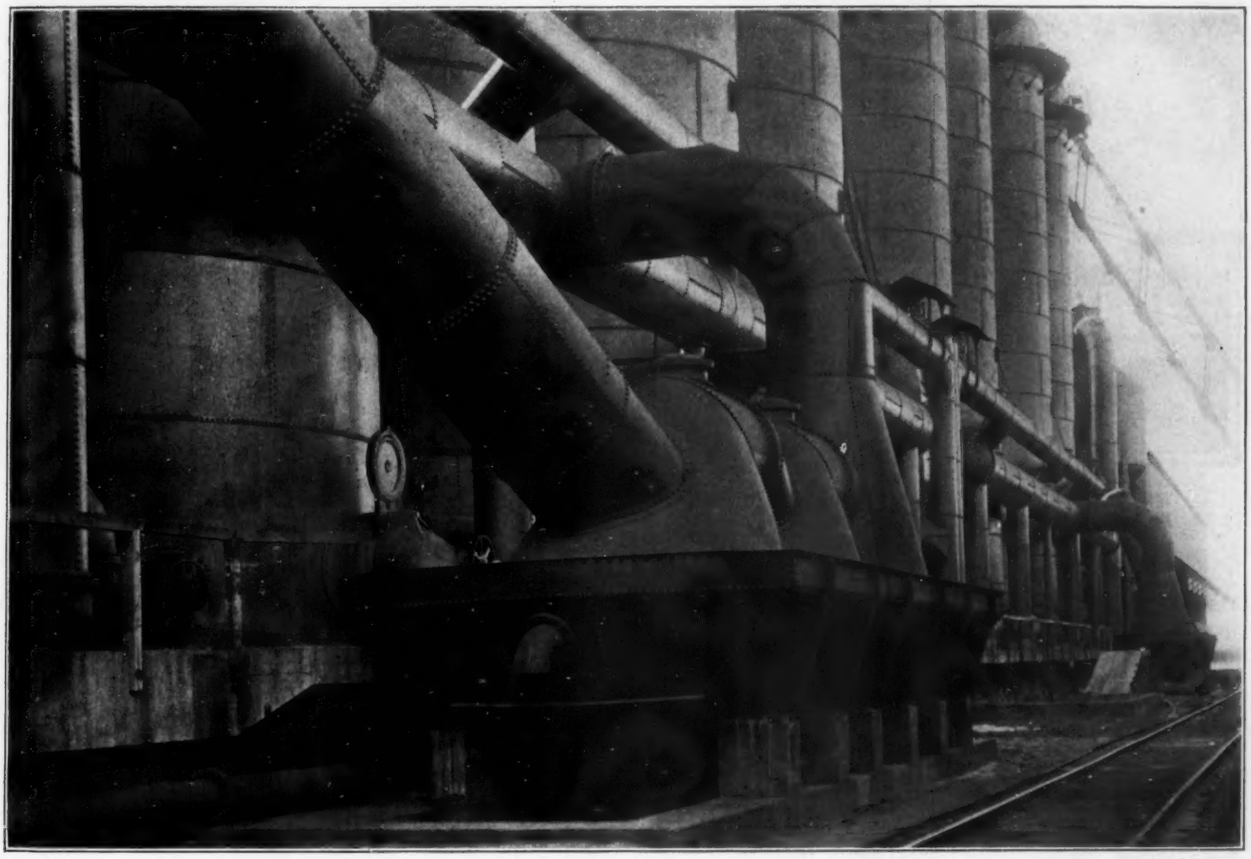


FIG. 4—THE STEECE GAS WASHER AND GAS MAINS FOR THE STOVES

a large tract of land, suitable for future plant extensions, remains unoccupied. The hearth is 14 feet in diameter and the center line of the iron notch is 14 inches, the center line of the cinder notch 5 feet 2 inches, and the center line of the tuyeres is 8 feet 8 inches above the hearth level. Each furnace is equipped with 12 tuyeres of standard design, connected to a bustle pipe, 24 inches inside diameter. The outside diameter of this pipe is 42 inches, the fire brick lining being 9 inches in thickness. The extreme bosh diameter is at a point 21 feet 3 inches above the hearth level.

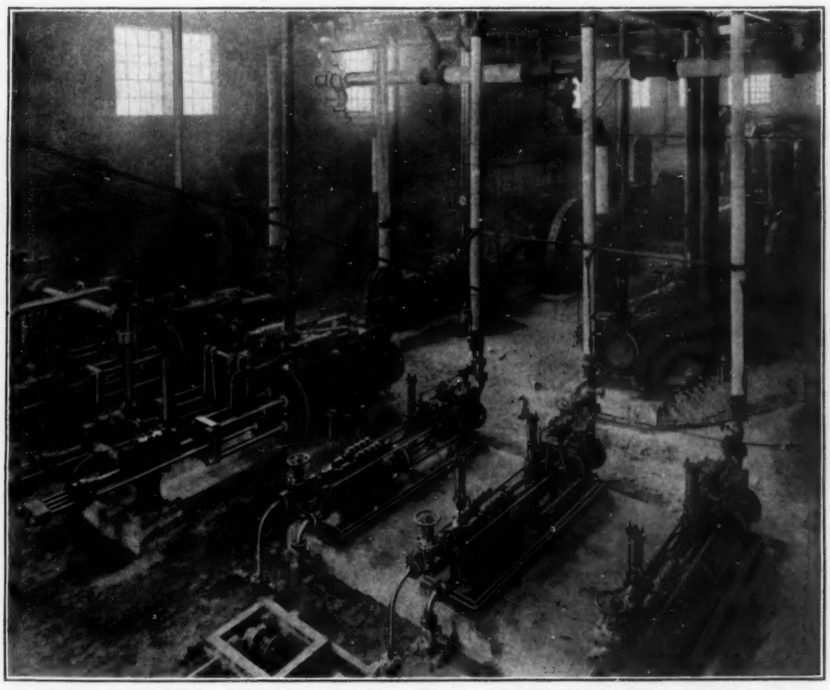


FIG. 5—A VIEW OF THE PUMP PIT

Cooling Plates

The hearth is enclosed in cast iron cooling plates, 4½ inches thick, surrounded by a 1½-inch steel plate jacket. Neither the hearth nor the shell are cooled externally. Eight rows of cooling blocks are provided in the boshes, 22 in the first row, 12 in the second and third, and 18 in the upper rows. There are 14 courses of cooling plates above the mantel spaced 3 feet apart. These plates are 3 inches thick and are set back 6 inches from the inside line of the brickwork. The plates are of the renewable type, patented by S. A. Kennedy. Openings are cut into the shell so that each cooling block may be easily removed. A view of No. 3 stack under construction is shown in Fig. 12. The 14 rings of plates are clearly shown as well as three of the four galleries which are built around the furnace to facilitate the convenient handling of the cooling plates. Another view of one of the furnaces from inside of the cast house which shows the tuyeres, bustle pipe, cooling plates and galleries, is shown in Fig. 10. In the erection of the furnaces and stacks, approximately 5,500,000 bricks were required and this part of the construction work was completed in seven and one-half months.

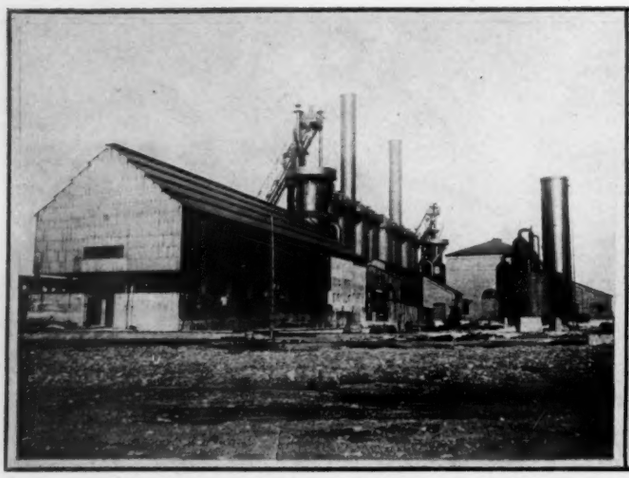


FIG. 6—SOUTHEAST VIEW OF THE PLANT, SHOWING ONE OF THE CAST HOUSES AND WATER SOFTENER INSTALLATIONS IN FRONT OF THE ENGINE HOUSE

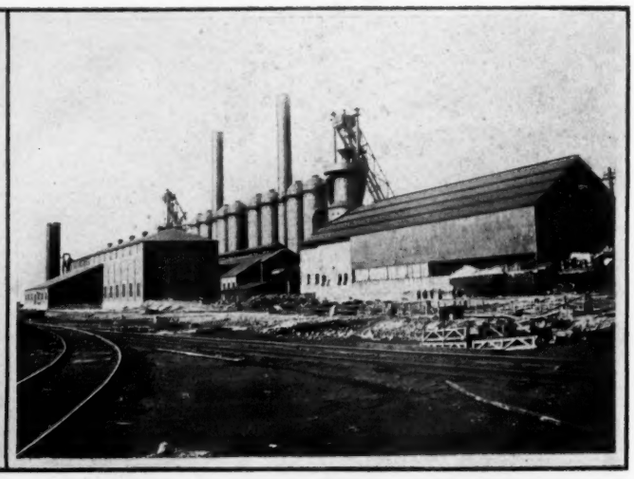


FIG. 7—NORTHEAST VIEW OF THE PLANT, SHOWING THE OTHER CAST HOUSE, BOILER HOUSE AND THE FRONT END OF THE ENGINE HOUSE

The hearths of the furnaces consist of alternate courses of 13-inch brick, laid on end, and 9-inch brick laid flat, each course having been leveled to a true surface. The brickwork of the furnace boshes consists of 9 and 13½-inch, standard brick, supported by heavy steel bands, which are held in place by steel castings. From the mantel to a point 8 feet below the stock line, the lining is 16½ inches thick and consists of blocks, 16½ inches long and 4⅛ inches thick, with a packing space of 2 inches. These blocks were laid with tight joints and each course was leveled to a true surface. From a point 8 feet below the stock line the lining increases in thickness to 27 inches.

Each furnace is equipped with a revolving top of the Kennedy type, the small bell being 3 feet 10 inches in diameter and the large bell, 10 feet 2 inches. The gases are taken off through four openings in the top, as indicated in Fig. 11. The skip bridges are designed for balanced operation and carry double tracks. The skip buckets are of the self-dumping type with the bale attached at the rear.

The Stoves

Each furnace is equipped with four Kennedy, central combination, two-pass stoves, 22 feet in diameter and 102 feet high. Each stove has two chimney valves and the hot blast valves are of the mushroom type, water-cooled with water-cooled seats. A plan view of the gas mains and side elevations of the mains to the boilers and the stoves are illustrated in Fig. 13, and the arrangement of the dust catchers, gas cleaners and gas washers also is shown. From the dust catchers the gas for the stoves passes through Steece gas washers, Fig. 4. The gas from the dust catcher main impinges upon the water in the washer and then passes through an elbow which again deflects it onto the surface of the water in the washer. Passing through another elbow, the gas impinges upon the water a third time before it passes into the outlet connected with the main for the stoves. The gas for the boilers passes through a centrifugal cleaner before entering the boiler main. The dust catcher is 22 feet in diameter, the boiler main, 5 feet 6 inches, and the gas main to the stoves, 4 feet 6 inches.

The boiler house is 336 feet long and 41 feet 6 inches wide. It is equipped with 24 250-horsepower water tube boilers, arranged in pairs. A front view of the boilers before the completion of the gas main and the installation of the burners is illustrated in Fig. 8, and Fig. 9 shows the neat arrangement of the piping on top of the boilers. A sectional view of the boiler house, showing the gas mains connecting the gas

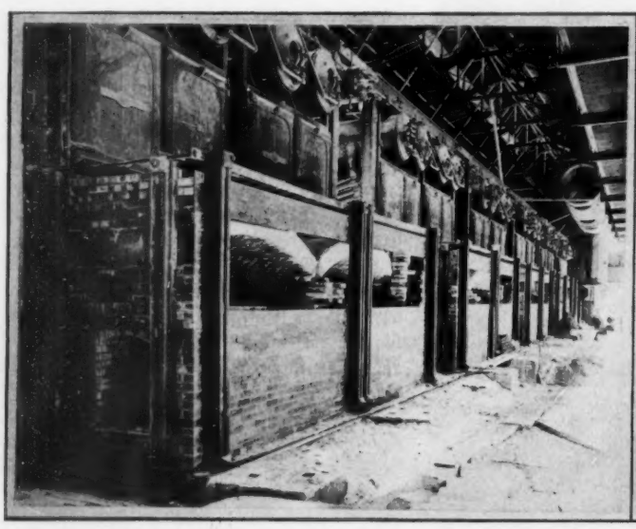


FIG. 8—FRONT VIEW OF THE BOILERS BEFORE THE COMPLETION OF THE GAS MAIN AND INSTALLATION OF THE BURNERS

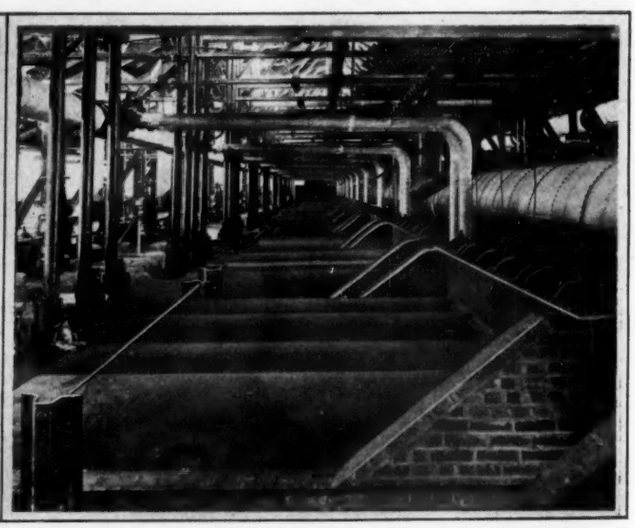


FIG. 9—TOP VIEW OF BOILERS, SHOWING NEAT ARRANGEMENT OF PIPING

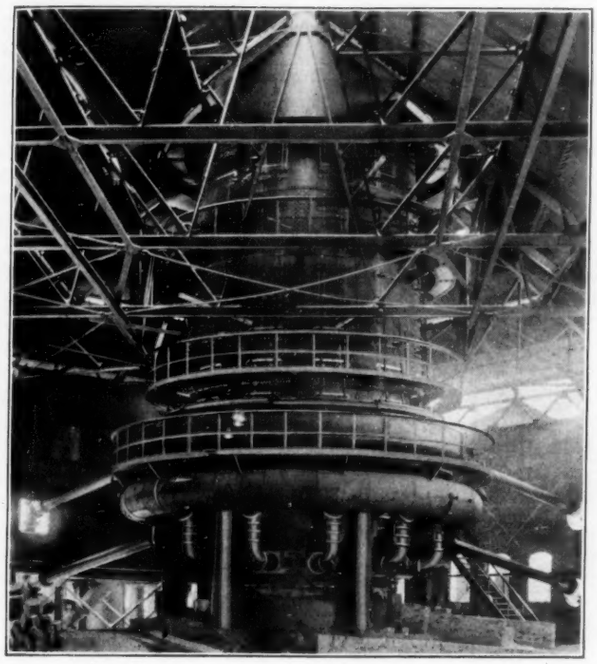


FIG. 10—ONE OF THE STACKS, WHICH CLEARLY SHOWS THE WATER-COOLING PLANT AND GALLERIES

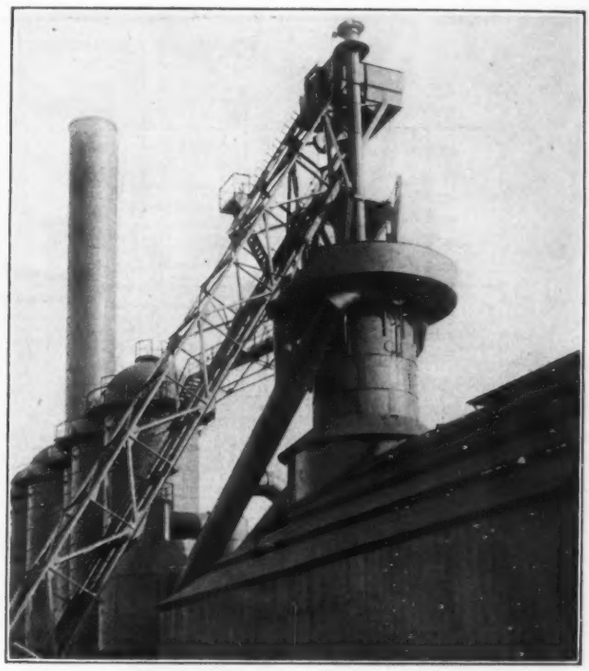


FIG. 11—ONE OF THE NEW STACKS, SHOWING THE SKIP HOIST AND TOP

cleaner with the boiler main and the dust catcher is shown in Fig. 16.

Electric Larries

Plan view and cross-section of the ore, coke and limestone larry bins are shown in Fig. 15. The electric larries operate on a suspended track underneath the bins, as illustrated in Fig. 3. The bins are of the Brown parabolic type and have been installed in two sets, one for each of the stacks. Each set is approximately 112 feet long and each of the eight panels 14 feet long. As shown in Fig. 1, the two rows of bins in each set are served by parallel standard gage tracks, laid along the top, and for distributing the ore, coke and limestone to the various panels, drop-bottom transfer cars are provided. These cars are electrically-driven and are equipped with four-compartment hoppers mounted on structural steel frames. One of these cars, showing the operating end, is in position over the larry bins in Fig. 1.

The Steel Bins

The ore bins have a capacity per panel of 183 tons of iron ore and 126.8 tons of limestone. The coke bins have a capacity per panel of 51 tons. Each panel length of the ore and limestone bins is equipped with two bottom spouts and gates while each coke bin panel has one spout and gate, as illustrated in Fig. 15. The driving shaft and gearing for the gates are hung from the bottom of the bins. The opening of the gate is controlled from the larry operating in the tunnel underneath the bins. Each larry has a bucket with a capacity of 120 cubic feet, which is carried on a special weighing mechanism. The balance levers are directly in front of the driver so that he may readily watch the quantity of material taken from each bin. Each larry is electrically-operated by a 20-horsepower motor through a train of gearing, the current being taken from a convenient

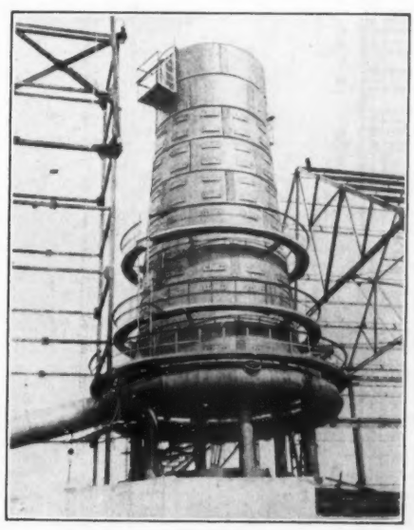


FIG. 12—NO. 3 STACK UNDER CONSTRUCTION, SHOWING OPENING IN SHELL FOR THE WATER-COOLED PLATES

trolley. The traveling speed with a full load is from 600 to 900 feet per minute. Another 20-horsepower motor is installed on the larry for operating the front gates of the bins and each motor has a separate conveyer. Projecting from each bin gate is a key, through which a mechanical connection is made between the larry motor and the gearing above. A socket located on the larry may be raised or lowered by levers from the driver's position to fit over this key. One man on each larry controls the complete transfer of material. Each larry has a capacity of five tons of ore or one and one-half tons of coke.

The cast houses are 205 feet 10 inches long and 64 feet 9 inches wide, and are equipped with Brown pig breakers and five-ton electric traveling cranes for conveying the pigs to the breakers. A Uehling pig casting machine also has been installed, which will take the iron from any one of the four furnaces.

Blowing Engine House

The blowing engine house is of brick and steel construction, 58 feet 4 inches by 286 feet. Extending a distance of 154 feet of this building is a lean-to, 49 feet 6 inches wide, in which the pump pit is located and which is on a level of 15 feet 6 inches below the floor of the engine house. A plan view of the engine house and the pump pit, showing the arrangement of the equipment, is illustrated in Fig. 14, and the equipment in the lean-to is shown in Fig. 5. A view of the engine house, showing the three blowing engines, is illustrated in Fig. 2.

The Engines

The three Tod blowing engines are of the horizontal cross-compound type with air cylinders placed in tandem with the steam cylinders. The steam cylinders are 48 inches and 90 inches in diameter and the air cylinders are 90 inches in diameter with 72-inch stroke,

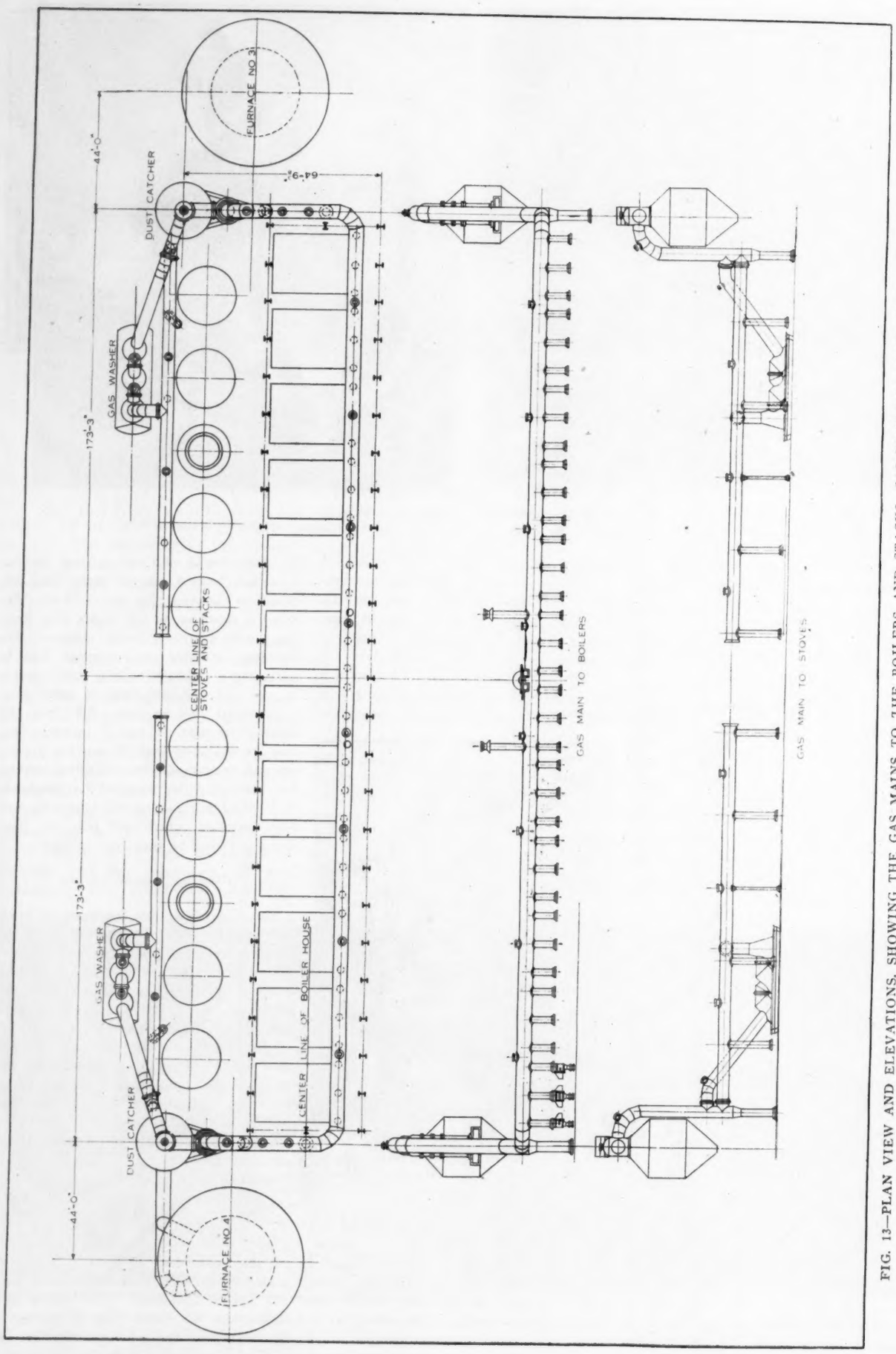


FIG. 13—PLAN VIEW AND ELEVATIONS, SHOWING THE GAS MAINS TO THE BOILERS AND STACKS, GAS WASHERS, DUST CATCHERS AND GAS CLEANERS

giving a piston displacement capacity of 41,000 cubic feet per minute at the rated speed of 40 revolutions per minute, or about 60,000 cubic feet per minute as a maximum capacity. This equipment for two furnaces provides one unit with an easy capacity for blowing each furnace and an additional unit as a spare. The engines are designed to blow against a normal air pressure of 18 pounds and a maximum air pressure of 30 pounds. The steam cylinders are equipped with Corliss valves, provided with a specially-designed long range gear with single wrist plates, while the air valves are of the standard piston inlet and pressed steel pot outlet type used by the Tod company in all moderate speed blowing engine work. Each unit is supplied with one 60-ton flywheel, 24 feet in diameter. Each unit complete with platforms, etc., weighs approximately 700 tons. As the engines are operated condensing with 150 pounds steam pressure, their fuel economy is relatively great. The air for the engines is taken in at the ground level and is carried underneath the engine room floor in tunnels. The percentage of moisture in the air at the ground level is much lower than when admitted at a point in the side of the engine house or when taken through the roof.

Pumping Equipment

The pump pit contains the hydraulic pumps for the pig breakers, three oil pumps for the bells and two large pumps, which have a capacity of 10,000,000 gallons of water each in 24 hours' pumping against a head of 110 feet, at 80 pounds. Two boiler feed pumps are provided and a water softening plant of the Wefugo type also has been installed. The blowing engine house is equipped with a 30-ton electric traveling crane. The capacity of the power plant has been increased by the installation of a 750-kilowatt General Electric generator.

The officers of the Rogers-Brown Iron Co. are as follows: Wm. A. Rogers, president; S. M. Clement, vice president; Hugh Kennedy, vice president and general manager; W. T. Shepard, treasurer, and H. D. Carson, secretary.

Chinese Iron and Steel Production

Interest in the probable development of a Chinese iron and steel industry of considerable magnitude has been created by the recent combination of Japanese and Chinese capitalists to amalgamate the Han-yang Iron and Steel Works, the iron mines and limestone quarry of Ta-yeh, and the coal mines and coking plant of Ping-hsiang. The Han-yang Iron and Steel Works

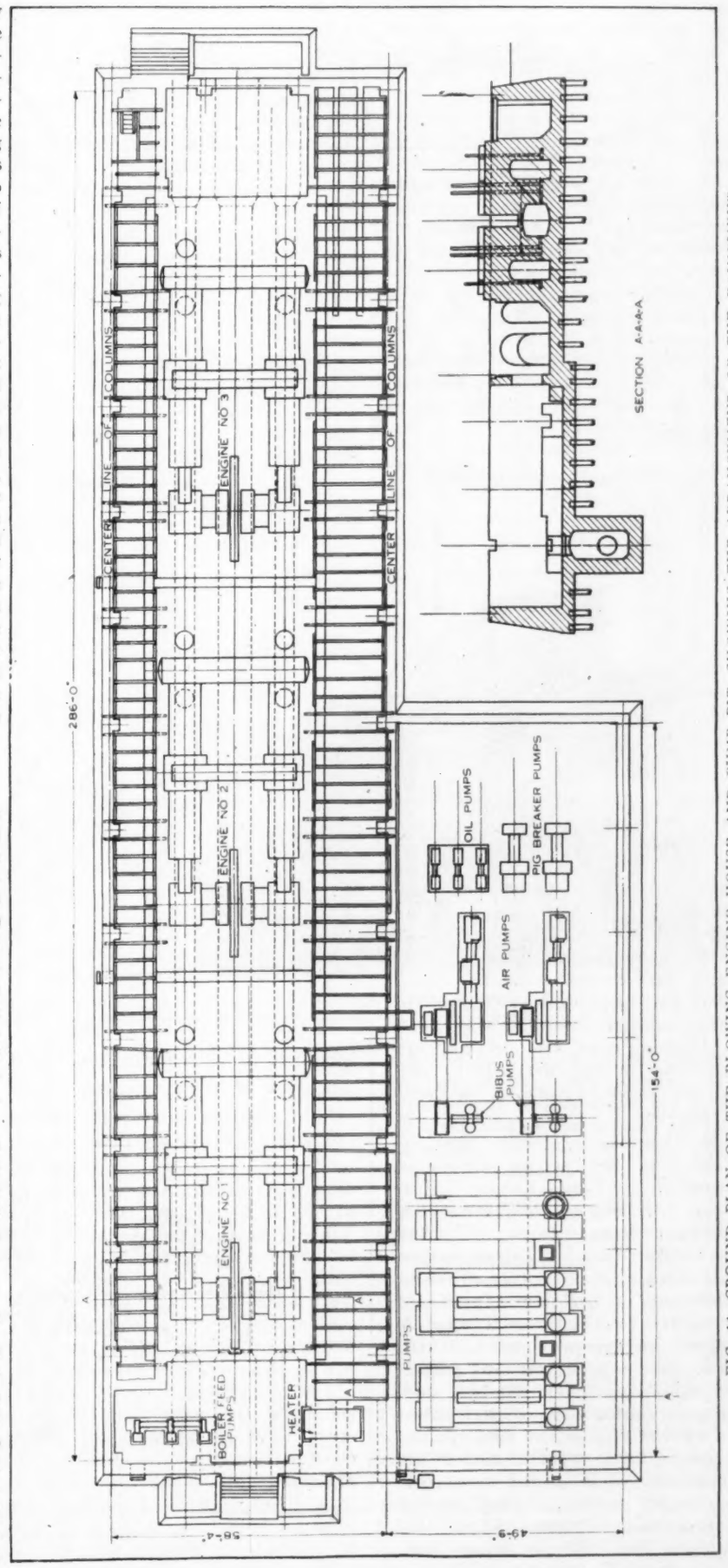


FIG. 14—GROUND PLAN OF THE BLOWING ENGINE HOUSE AND PUMP PIT, SHOWING THE ARRANGEMENT OF THE EQUIPMENT

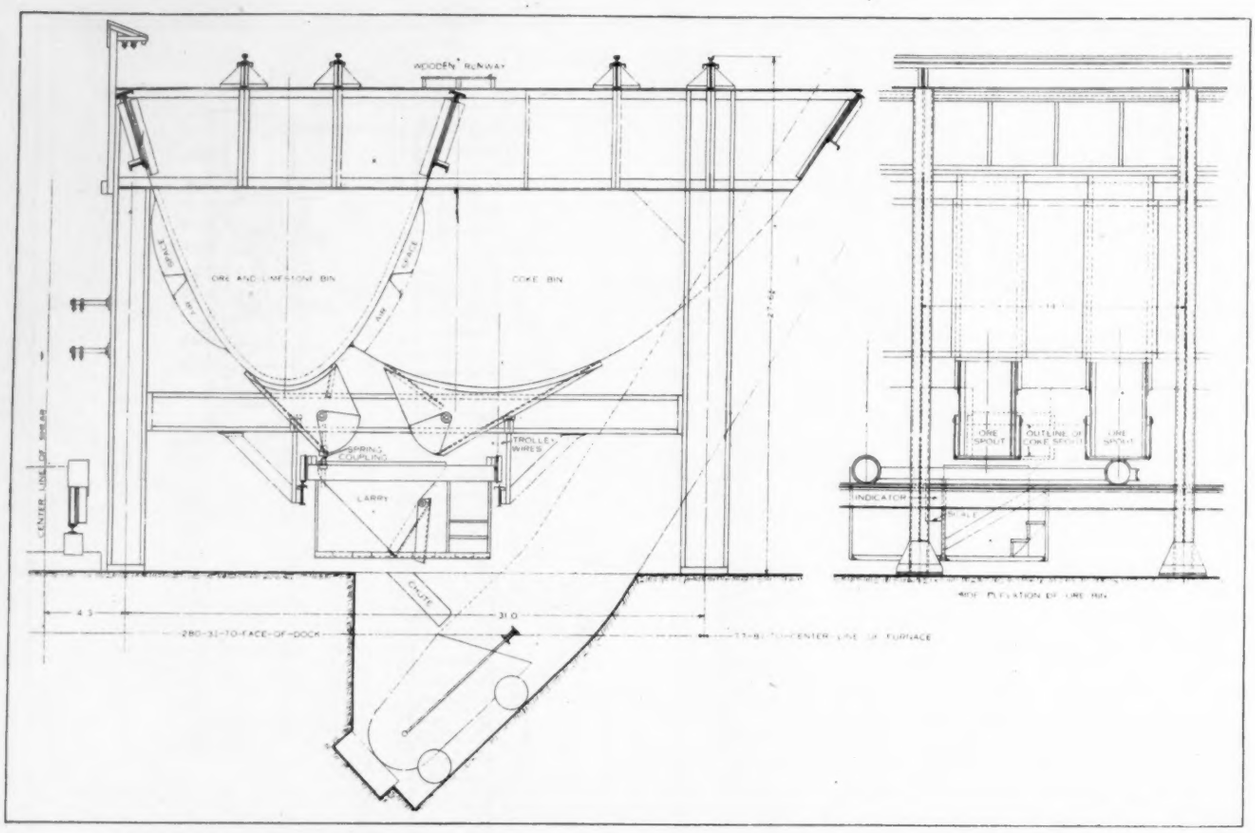


FIG. 15—CROSS-SECTION OF THE PARABOLIC ORE, COKE AND LIMESTONE BINS AND PLAN VIEW, SHOWING THE LOCATION OF SPOUTS

are situated on the Yang-tse river, near the city from which they derive their name, and are separated from Hankow by the Han river, and from Wu-chang, the capital of Hupei Province, by the Yang-tse river. The Ta-yeh Iron mines are situated about 90 miles down the river from Hankow, and about 30 miles southward, and the coal fields of Ping-hsiang are situated about four miles from that city, which is located in Kangsi province about 250 miles south of Hankow. The ore and coal are transported to the river side by rail, and are carried by water to the docks at Han-yang.

The Han-yang iron works were established in 1891 by the late Grand Counsellor Chi-Tung. German capital was at first interested, but latterly they passed entirely into Chinese hands. The iron works consist of three modern blast furnaces, producing annually about 180,000 tons of pig iron. The height of the two older furnaces is about 70 feet, and the external diameter, 20 feet. About two-thirds of the total production of pig iron is turned into steel, for rails, angles, beams, plates, sheets and railway supplies. A small portion of the pig iron output is used in the foundry, and some is used by the natives locally, the balance being exported to Japan and the United States. According to the *School of Mines Quarterly*, the composition of the finished pig iron and steel made by this company is as follows:

	Foundry pig iron per cent.	Basic pig iron per cent.	Finished steel per cent.
Carbon	3.80	3.900	0.400
Silicon	2.50	0.650	0.085
Manganese .	1.00	1.100	0.089
Sulphur ...	0.01	0.045	0.055
Phosphorus .	0.02	0.250	0.028

For making steel, the equipment consists of six Siemens-Martin open-hearth furnaces, a cogging mill, angle mill, rail mill, plate mill, and other equipment capable of rolling 1,000 tons of finished steel per day. The present output is about 300 tons per day. The main ore bodies at Ta-yeh appear in three hills about 800 feet in height. Two of the hills are separated by a

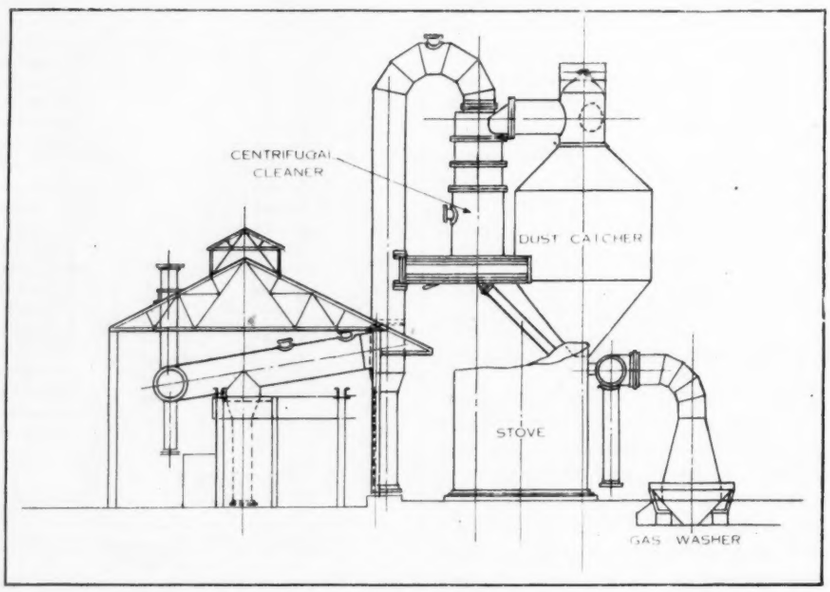


FIG. 16—SECTION OF BOILER HOUSE, SHOWING THE LOCATION OF DUST CATCHERS, GAS CLEANERS AND GAS MAINS

narrow valley, while the third is distant 3½ miles east. In many veins the ore is left exposed to the surface. The ores consist mainly of hard hematite, with some magnetite and limonite. Most of the mining is done by open cut, and very little stripping is being done at present. The ore is blasted down as in stone quarrying, the drilling being all done by hand. It is sent down by gravity planes in 1-ton cars, which are dumped by means of revolving cradles into railway cars of 11 tons capacity, in which it is transported to the river side, where it is loaded into lighters, of 350 tons capacity, which are towed two at a trip, by steamer to Han-yang. The output of the Ta-yeh mines is about 1,600 tons of ore daily, or about 500,000 tons yearly. Of this amount, 125,000 tons is exported to Japan, which country has contributed greatly to the prosperity of the enterprise by its contract for the purchase of iron ore for the government works at Wakamatsu, and also by the investment of private capital. At the present rate of output the ore in sight will, on a conservative estimate, last for 70 years. The iron content of the magnetite ore is placed at 65 per cent, that of the hematite at 62 per cent, and the brown ore at 48 per cent. At Ping-hsiang, the coal outcrops on the hillside, the seams being from 6 inches to 36 feet thick. In quality the coal ranges from soft to hard bituminous. It is transported to Chuchou on the Hsiang river by rail, and then by boat to the Yang-tse. About 3,000 miners are employed, and the annual output of coal is about 500,000 tons.

Atlas Ball Co., Philadelphia, has been incorporated for $10,000; to manufacture steel balls, ball bearings, etc.; by Otto W. Schaum, Thomas J. Heller and Wm. H. Rometsch.

Boring Machines for Heater Sections

A new reaming and boring machine, especially designed to handle heater sections, has been built by the Beaman & Smith Co., Providence, R. I., and is shown in the accompanying illustrations. The machine consists of a platen, 6 ft wide, 10 feet long, and 12 inches high, on which is supported two uprights, placed parallel and spaced across the platen. In the rear of the uprights, and continuous therewith, are two horizontal beds, Fig. 2, which, together with the uprights, form a passage down the center of the platen. This passage is provided with a central groove or track, on which a jig holding the work is rolled into position to be machined. Two jigs are furnished with each machine to insure its continuous operation. They are used alternately, the work being adjusted on one, while the other is being used. The work is performed by six spindles, carried by adjustable saddles, two being mounted on the face of each upright, Fig. 1, and one on each of the horizontal beds. The spindles are made of crucible steel, and the ends are shaped to fit any type of cutter that may be specified. All of the spindles run in boxes of hard bronze, the front ones being 3 inches in diameter and 6 inches long. The spindles on each upright are driven in unison while those on the beds are driven independently. All spindles have a horizontal movement of 11 inches in their respective heads. Four speeds are available, ranging from 15½ to 32 revolutions per minute. The feeds are automatic and range from 1-64 to 1-16 of an inch per revolution of the spindle, and are obtained by the use of change gears. The power is transmitted by two 5-inch belts running on two four-section cones, Fig. 2, varying from 14 to 20 inches in diameter, which operate gearing having a ratio of 14 to 1. The spindles on each side of the machine are driven independent of the other side. The distance between each upright is 23½ inches. The minimum distance between the centers of the spindles on the uprights is 18 inches and the maximum 49 inches. The minimum distance from the center of the lower spindle to the top of the platen is 15¾ inches. The minimum distance between the ends of the spindles is ¾ inch and the maximum 22¾ inches. From the centers of the spindles on the uprights to the center of the rear spindles, the minimum distance is 36 inches, the maximum 62 inches. The distance from the center of the rear spindles to the top of the platen is 40¼ inches.

The countershafts are recommended to be run at a speed of 310 revolutions per minute. The diameter of the pulleys is 14 inches and a 7-inch belt is required to transmit the power. The weight of the machine is approximately 31,000 pounds.

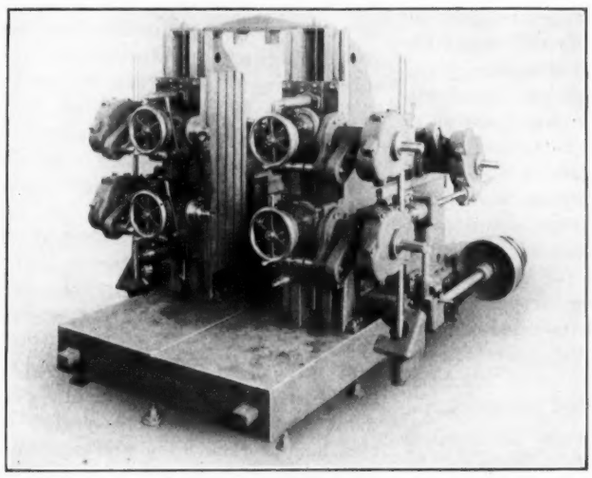


FIG. 1—A SIX-SPINDLE REAMING AND BORING MACHINE

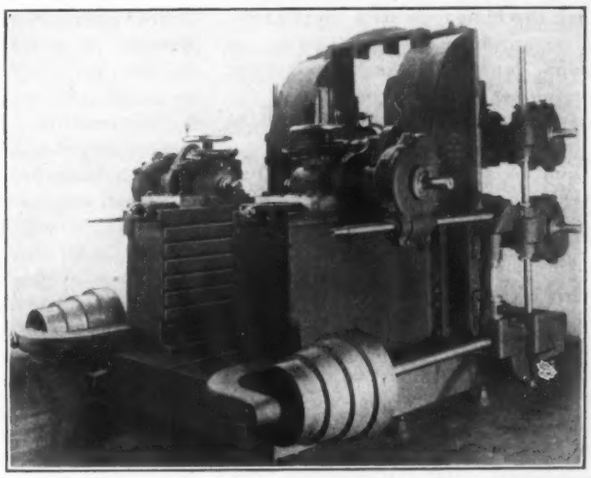


FIG. 2—REAR VIEW OF SIX-SPINDLE REAMING AND BORING MACHINE

An inventory of the I. & E. Greenwall Co., Cincinnati, manufacturers of steam engines and special machinery, has been filed by Receiver John H. Gibson in the insolvency court of that city. The assets amount to $302,890.40, and the liabilities about $111,000. The inventory shows the values fixed as follows: Machinery, $76,398.50; tools, $6,804.07; material, $13,331.73; real estate, $125,000; work in progress, $1,856.06; power plant, engines and boiler, $2,950; foundry supplies, $1,178.50; other property, $63,235.50. The ledger accounts are as follows: Good, $12,995.98; doubtful, $4,327.72; and bad, $4,794.42.

Suggestions for Preventing Foundry Accidents

W. H. Cameron, Manager of Casualty Department of American Steel Foundries, Addresses Pittsburgh Foundrymen's Association

Moses was the first advocate of safety. In the eighth verse of the twenty-second chapter of Deuteronomy, he warns the Israelites of their responsibility as hosts to protect their guests by erecting safety railings around the roofs of their houses. He says: "When thou buildest a new house, there thou shalt make a battlement for thy roof, that thou bring not blood upon thy house, if any man fall from thence." In all parts of this country today we are hearing similar injunctions from the law-makers, like this: "When thou buildest a factory, there thou shalt safeguard and protect thy workmen from injury." Moses defined the obligation as a moral duty, but the problem today is also an economic one, and the manufacturer or employer will discover that the money losses due to accidents will be so great as to necessitate and compel him to take an interest in their prevention.

Accident Statistics

Statistics of injuries and fatalities among industrial workmen have been heralded widely during the past few years. We are told that 30,000 to 35,000 wage earners die from work accidents in the United States every year. In addition to these fatalities approximately 2,000,000 men are seriously injured. It would be difficult to imagine the amount of suffering and distress these accidents bring upon the sufferers and the families dependent upon them. But the economic aspect of this subject is interesting, too. This tremendous array of casualties in a recent year cost $25,000,000 in employers' liability insurance premiums alone. This is the cost to the employer of protection, but it has been estimated that not more than 25 per cent of the insurance premiums reach the sufferers from accident. We are, therefore, face to face with the question of how to prevent accidents. and reduce the suffering and deprivation which these losses entail upon the workmen and their employers, as well as upon society as a whole.

All accidents due to negligence are largely preventable. The means of prevention lies in the direction of: (1) Proper design and construction of plant and appliances; (2) care on the part of employers and employes; (3) the use of safety devices. It must not be overlooked that in the past employers have concentrated their attention on the machinery and equipment of their plants, and overlooked the most important element of all. the care of the human machine. Although considerable stress will be laid in this paper upon the proper design and installation of protective devices, it is believed that at least two-thirds of the accidents which happen in any plant are due to carelessness on the part of the worker and negligence for which the employer and employe are responsible.

It is an easy matter nowadays to secure information from the current journals of the details of organization for carrying out elaborate plans for safeguarding employes, involving the expenditure of large sums of money, but while it is believed that the underlying principles of both large and small organizations are essentially the same, it will be the intention of the author of this paper to define the experience of one of the smaller corporations in its efforts to prevent accidents and protect its workmen to the maximum.

Attempts to Control Accidents

Up to 17 months ago, the American Steel Foundries followed the usual custom of protecting itself from money losses due to accidents under employers' liability policies. Investigations were made several times with a view of ascertaining the probable cost and risk of carrying its own insurance, but on account of the hazardous character of its work, the insurance was continued until it came to the realization of the economies of safeguarding. It then became apparent that the company could control to some extent at least the frequency of accidents among its employes, and this assumption has been borne out by actual experiences. As in other pioneer work, the simplest method was first followed. A general inspection was made of the equipment and buildings at the plants, and recommendations made for the protection of the most dangerous places. When these recommendations were approved the master mechanics at each plant were asked by the managers to supervise the making and installation of the guards, and to report monthly the necessity, if any, for additional guards. This method was only partially successful. The master mechanics were busy men, and more or less calloused by frequent contact with carelessness and indifference on the part of the workmen. As will be shown later, the initial efforts to protect the men were not received kindly, and it seemed futile to foist upon them what they looked upon as handicaps in their work.

Workingmen's Committees

The next step in furtherance of the safety work was the appointing of workingmen's and foremen's committees. Three men were selected from three different departments of the plant, and instructed to make four whole-day inspections during the month. Men were selected who were not only old employes, and familiar with all parts of the plant, but who were known to be conscientious and not afraid to report what they saw. These men were carefully instructed in their work, and informed that the company did not obligate itself to accept any of the suggestions, or do any work. They were paid full wages while engaged on their inspection duties, and $5 each upon presentation of their reports at the end of the months.

These workingmen's committees revealed the immense possibilities at each plant for protection. We received during the first month in all about 1,000 suggestions, and at two of the larger plants approximately 300 each. These recommendations were described carefully in writing, and numbered numerically, and submitted to the three foremen in charge of the departments from which the men were selected, and they acted as a jury in approving or disapproving the suggestions made. The jury of foremen visited and inspected all of the dangerous conditions pointed out by the workingmen's committee, to be in a position to say "yes" or "no" to the recommendations. Only a small percentage of the suggestions were rejected as impracticable. The combined report of the workingmen's and foremen's committees were then submitted to the plant managers, and they expressed their opinion of the reports. The result of the careful con-

sideration of each recommendation from three different standpoints was a warranty to the officials of the company that the final recommendations were probably worthy of acceptance. These committees were continued during the following month, and with about the same results. They were then discontinued for the reason that each plant had so much work to do that it seemed impracticable to pursue the subject further until the recommendations already made had been carried out. Since then, however, similar workingmen's committees have been appointed with continued good results, and it is believed that the workmen in the plants, familiar with every working condition, and having the interest of their self protection in view, can be as productive as any other agency in calling attention to the hazards of the industry. By changing the committees monthly the attention of a number of workmen will be in time especially directed to the subject of safety, and this nucleus will help to leaven the lump of the disinterested mass of workers.

The next step in our experience was to find a means of following up the work economically, and at four plants employing approximately 1,500, 900, 700 and 500 workmen, safety inspectors have been engaged to devote all of their time and efforts to the safety, including the inspection of machinery or equipment for broken or worn out parts, the continued use of which may cause an accident, such as flask trunnions and flanges; the inspection of buildings for loose bricks, pillars, boards and loose material stored overhead; cranes and crane runways for loose parts; use of gongs on cranes; improper riding of workmen on loads being carried by cranes. Also to be on the lookout for slippery places on floors and stairways; holes; broken boards, and protruding nails in boards. To make regular inspections of railroad tracks for guards at frogs and switches; holes about tracks; piling of materials too close to tracks; riding on engines and cars without permission, as well as hoisting cables for broken strands and rust. To oversee the use of scaffolding for painting or making other repairs. The use of congress shoes by foundrymen, and to be on the lookout for loose sleeves while operating machinery. To inspect for the proper and constant use of safe guards. To report narrow escapes from injury, and the causes therefor, and to recommend discipline for workmen or recommendations for additional protection, as well as to report all other conditions about the plant which might be considered hazardous and likely to result in injury to workmen or damage to the company's property. These inspectors are required to attend all meetings of foremen to call attention to unsafe conditions about the plant, and to suggest improvements in the method of handling the work from a safety standpoint.

Attitude of Managers and Foremen

Reports of serious accidents and the causes therefor are also discussed at the meetings of the foremen, and the heads of departments. It is exceedingly important to bring constantly to the minds of foremen the necessity for caution and care in the habits of the workmen. The burden of stimulating the foremen and heads of departments rests almost entirely upon the management of the plant. The manager's and foremen's attitude toward the prevention of accidents will be reflected by the workmen just as accurately as their attitude toward the production of castings is reflected. If the manager treats the subject lightly, his assistants will look upon it in the same way. If he shows a determined desire to avoid accidents, and have the rules of the plant obeyed; if he makes prevention of accidents one of the most important features of his department, then the foremen will reflect his attitude toward the work, and will see that the men take the precautions which are known to be necessary for the prevention of accidents.

The results of the committees' investigations were forwarded to the central office of the company, and all of the plants have received the benefit of all the recommendations made. The central office keeps in constant touch with the inspectors on safety matters, and when an accident occurs showing carelessness or unnecessary risks taken, or where the use of a safeguard would have avoided the accident, a sketch and safety bulletin is sent to all of the plants, with recommendation as to the avoidance of similar accidents. The central department also has charge of the care and compensation of all injured employes under a voluntary relief plan; receives full reports of all accidents, and when it is apparent that repetition of such accidents can be avoided by cautionary measures, recommendations are made to all of the plants, so that each one receives the benefit of the experience of the other.

The organization of the safety work has, therefore, been conducted through the efforts of committees at each plant; a supervising safety inspector, and the general dissemination of the experience of all plants through a central office. For the smaller collective groups of plants, this plan will be found effective and inexpensive. The safety inspector in a plant employing from 500 to 600 workmen will have ample time to attend to the full investigation of all accidents, and the preparation of all reports, as well as to the visitation of injured workmen, and represent to them the interest of the company in their welfare and speedy recovery. He also can assist the company in reporting workmen who are inclined to magnify their injuries and make fictitious claims against their employers. We believe that these inspectors need not necessarily be experienced men in safety work. Suggestions and photographs of practical safeguards have been distributed so widely and liberally during the past year or two by such corporations as the United States Steel Corporation, International Harvester Co., American Museum of Safety and others that a fairly intelligent young man can soon apply the data at his command to the conditions in the particular plant he represents.

My future remarks will be confined largely to the work which has already been done by the American Steel Foundries for the prevention of accidents at its several plants. It is obvious that the industrial plant that can seriously follow up a plan of accident prevention must undertake: (1) To provide and maintain proper working conditions and efficient safeguards; (2) to educate its employes and inculcate in them habits of caution.

Probably 75 per cent of the accidents in steel foundries affect the eyes of workmen. It, therefore, became apparent at the start that it was necessary to provide all grinders, chippers, floggers, sand blasters, machinists, ladlemen and others with eye protectors which would be suitable and comfortable, and not impede the work or injure the eyes of the workmen. An investigation of the use of spectacles and goggles by other industries revealed the fact that not one had been entirely successful in educating the workmen in the use of any style of spectacles. It was found, however, that the old fashioned type of grandfather's glasses has successfully protected the eyes of men working at emery wheels, and with these glasses as a foundation to build on the spectacles now in use are worn by about 98 per cent of the employes mentioned. The present design of spectacle is equipped with mesh screens at the sides, and heavy lenses.

The total weight is about one ounce per pair. A case is provided with each pair of spectacles, as well as a specially prepared cloth, and paraffine pencil, used by automobilists to keep their glasses free from moisture and dirt.

Inducements to Wear Spectacles

The next problem was to have the glasses worn by such workmen as chippers and floggers—the majority of whom are foreigners and it was found that these men would not voluntarily use the spectacles. An effort was then made by one of the plants to have the spectacles worn under the supervision of a watchman, who had time to circulate constantly among these workmen, and stimulate them in the use of the spectacles. Since the employment of safety inspectors this duty has been delegated to them. As an additional stimulus to wear the spectacles, every cleaning room workman was asked to sign a contract with the company under the terms of which he agreed to wear the spectacles constantly, and in the event of injury to his eyes happening while at work without spectacles the company is absolutely free from responsibility for the accident. When spectacles have been broken by flying chips, photographs have been made of them and posted on the bulletin boards about the plants to illustrate the hazardous nature of the work. It is believed that supervision and education along the lines described will have to be adopted in all foundries employing a large number of chippers and floggers, for the reason that these men will not protect themselves voluntarily, and the foremen and their assistants are usually too busy to give special attention to the use of the spectacles.

I have brought with me a collection of 78 pairs of spectacles, the lenses of which have been damaged by flying chips over a period of less than three months. Fifteen pairs of these spectacles were received from one plant in one month. Only one eye has been lost in all of the plants of the American Steel Foundries over the period of 17 months by workmen using these spectacles. In this one instance the piece of steel penetrated the lens with great velocity, and entered the eye of the workman. If the spectacles had not been worn, we believe that a much more serious accident would have resulted.

Another means adopted by our company to protect workmen while cleaning castings, is to provide screens made of canvas, mounted on supports to be placed between the men as they work. The screens have been effective in preventing flying chips from striking fellow workmen, but they are not as complete protection to the individual workman as the use of spectacles.

We also require emery wheels over 8 inches in diameter to have a safety taper of ¾ inch to the foot, and be protected with safety collars. This means that the wheels will be convex in shape, while the collars will be concave, and should the emery wheel break in service, it being thicker at the hub than at the face, the pieces will be held in place. All emery wheels are also protected with cast steel hoods with plates bolted at one side, and the emery wheels used by the workmen grinding tools are provided with plate glass shields to protect the eyes. Care is also taken to keep tool rests closely adjusted to the wheels so that castings cannot be jammed between the wheels and rests.

Emery wheels often break through mistakes made by repairmen in not changing the speed limits when placing new wheels on spindles. Our safety inspectors are required to test the revolutions per minute of all emery wheels once per week, and check up the speed limits. Wheels are often run at speeds far too great for their diameters. The belts and pulleys of all emery wheels are also protected by metal guards.

Sand blasters are protected with helmets and respirators, and arc welders with aluminum helmets and rubber aprons covered with asbestos.

Foundry

Accidents occur in all foundries by feet being burned by slopping metal. It is very important that workmen wear whole shoes, and that they be so constructed that they may be slipped off quickly. We urge upon our workmen the necessity for wearing congress shoes, and we have undertaken to keep a stock of such shoes on hand at all plants, which are sold to the workmen at wholesale prices. The result is that the workman buys the shoes and protects himself from accident, and the company benefits from keeping the workman constantly at his job and by a reduction of the accident expense account.

Cranes

All overhead cranes should be provided with walks on both bridge girders, extending the entire length of the crane. Each crane should be provided with safety switch installed on the bridge, which will cut off all power, making it impossible for an absent minded operator to forget that men are working above, and start the machinery from the cab. Each crane should also be equipped with guards extending out from the truck wheels, the purpose being to warn any person who may be resting his hand on the runway of the approach of the crane which he might fail to notice because of other noises. A number of accidents happen every year to persons working on scaffolds on crane runways. A workman may rest his arm or leg thoughtlessly against the runway, and fail to notice the approach of the crane, and be run over with the loss of one arm or leg.

Guards for Gearing

All trolley gears and truck drive gears should be guarded. The floor should be completely covered in so that loose parts will not fall through the openings in the bridge girders of the trolley carriage. This is important both from a safety standpoint and from an operative point of view.

Cables and chains should be inspected regularly. The exposure of crane chains to the prolonged action of the radiant heat of metal in the ladle seems to cause a molecular change in the metal of the links. It is not safe to call this a crystallization, but such broken chain links always show a short and lustrous fracture, which is called crystalline, whether it is really so or not. Frequent inspection, annealing and renewals after a certain period of time are the only safeguards against this.

Every crane should be equipped with a foot gong. When these gongs were first suggested objection was made that the gongs would not be heard above the other noises in the foundry, but experiment soon proved the value of the warning, and all cranes have since been equipped with gongs. These gongs are also guarded by wire-nets to prevent the gongs from falling on the heads of workmen, should they become disconnected or break in pieces. Of course as a general part of the equipment of cranes, foot brakes should be provided, as well as boxes for oil cans and tools, so that the latter will not be laid around carelessly, and fall on the heads of workmen.

Steel ladders should be provided to enable cranemen to reach their cranes safely. These ladders should be made of angle iron; not pipe.

Band saws should have a hinged guard covering the top and front of the saw to prevent the saw flying should it break, and a head guard extending down from the saw to prevent the workman's head from acci-

dentally coming in contact with the saw. The saw below the table should be encased. We are now trying out a wooden guard, designed in one of our pattern shops, which we expect to prove satisfactory.

We also believe that all pulleys and belts in the pattern shop should be guarded, if there be any danger of timbers being caught in them.

It is also important that the knives of wood jointers be guarded. We have adopted an aluminum guard for this purpose, and it has been found to be satisfactory in every way. It is equipped with a strong spring to keep the guard constantly in position. We have equipped all of our planers with safety cylinders, which, instead of pulling the man's hand into the knives, throws it out from the machine, and instead of losing his fingers or his hand he sustains comparatively slight injuries. We have not had a report of a serious injury to pattern shop workmen from the use of the planers since the adoption of safety cylinders, and the use of the guard referred to.

Rubber matting in front of all pattern shop machines is recommended.

Machine Shop

All gears and pulleys should be encased in metal guards. The standard requirements for gear guards is that the gears shall be covered on the side as well as on the face, that the guards shall cover the gears to such an extent that the danger of being caught between the end of the guard and the cog of the wheel will be eliminated, and openings should be made, with sliding covers, to enable oilers to do their work.

There is danger of having the limbs caught and sheared off between the table and the ribs of the planer bed. Workmen, contrary to all rules, ride on the tables of these machines, and a guard placed over the bed eliminates this danger. When the beds are left open they are used frequently as a receptacle for tools, oil cans, etc.

All counterweights should be enclosed by metal guards with door openings, so that the weights can be easily removed should they fall, without detaching the entire guard.

Switch box doors should be equipped with latches, and repair-men and others supplied with locks, so that workmen can protect themselves by locking up switches to avoid the danger of machinery being started while repair or other work is being done upon it.

The ends of piston rods, extending beyond the cylinder heads should be guarded, the purpose of the shield being to prevent the men getting so close to the cylinder that they will be struck by the rod.

All fly wheels should be guarded either with plate or wire net guards. All points on engine beds where oilers may have occasion to walk should be provided with screen or plate guards to a height of 5 feet from the pillar blocks.

Space of Less Value Than Safety

There will be an opportunity in almost all foundries to apply protection to such machines as charging cars, where it is found necessary to provide guards for the truck wheels. Where a railroad track runs close to a building, railings should be placed at the corner of the buildings to prevent men suddenly stepping from the buildings onto the tracks.

Considerations of economy often lead to the overcrowding of machinery, in other words, too many machines are placed in a given space. The width of the passageways between the machines is thus reduced to the point of danger. Any undue curtailment of space interferes with the proper handling of the machines, and adds to the risk and probability of accident, owing to the operator being exposed to contact with gears, pulleys, belts and other moving parts, or even where guards are provided in fullest measure, it is really impossible to eliminate absolutely all danger. The space should not be held of more value than safety.

Cleanliness about the shop and yards cannot be too strongly urged, as there is no question as to its being a factor in causing men to be more cleanly about their work, and in preventing accidents due to untidy conditions. It is also true that shop windows should be cleaned at regular intervals, and illumination generally may be greatly improved by whitewashing the walls of a dark room at least once a year. This also saves much of the cost of artificial illumination. Mention may be made of the risk of permitting unsuitable clothing to be worn. Leather leggins for the use of belt repairers will minimize the risk of accident as there is considerable danger of these workmen having their trouser legs caught in moving machinery. Gasoline should not be carried in open cans. This is frequently done by careless workmen, but it is the avoidance of such accidents as these that assists in the improvement of the accident record.

I suppose there is no one who has ever had anything to do with the operation of a machine shop who has not heard of the danger in protruding set screws. Nevertheless, these will be found in every plant, and they should be countersunk to make the working conditions safe. Slippery floors are also a menace to unsuspecting workmen, and, if necessary, rubber matting should be provided to prevent accidents.

The insistence on rules and regulations is emphasized by all persons having anything to do with the prevention of accidents, but we believe that these should be used sparingly, and be as brief as possible. They may give legal protection in damage suits for accidents, but they are practically worthless, if no attempt is made to enforce them. We believe that a few effective rules insisted upon by educated foremen, in sympathy with the full protection of their workmen, will be far more effective than a long list of works rules which few will read, and none will remember.

Economic Advantages

We believe that money and effort expended for the protection of workmen in foundries will be amply returned in the form of a better and more stable organization, and an actual saving in the accident expense account.

A Calculator for the Structural Engineer

The Des Moines Bridge & Iron Co., Pittsburgh, is distributing to structural engineers and others interested in the subjects with which it deals a highly useful and convenient souvenir in the shape of a pocket calculator, arranged to instantly solve a wide variety of problems such as the safe uniform or concentrated loads for almost any section or span, or, vice versa, the section required for a given load, singly or in multiple, and the deflection under the stated conditions. The reverse side gives direct readings for scantlings of tanks, boilers, standpipes, etc., under various conditions of pressure and with different joint efficiency, or, as before, any two of the conditions being known finds the third. The calculator should be a time-saver to any one having to deal with these problems and will doubtless be much sought after.

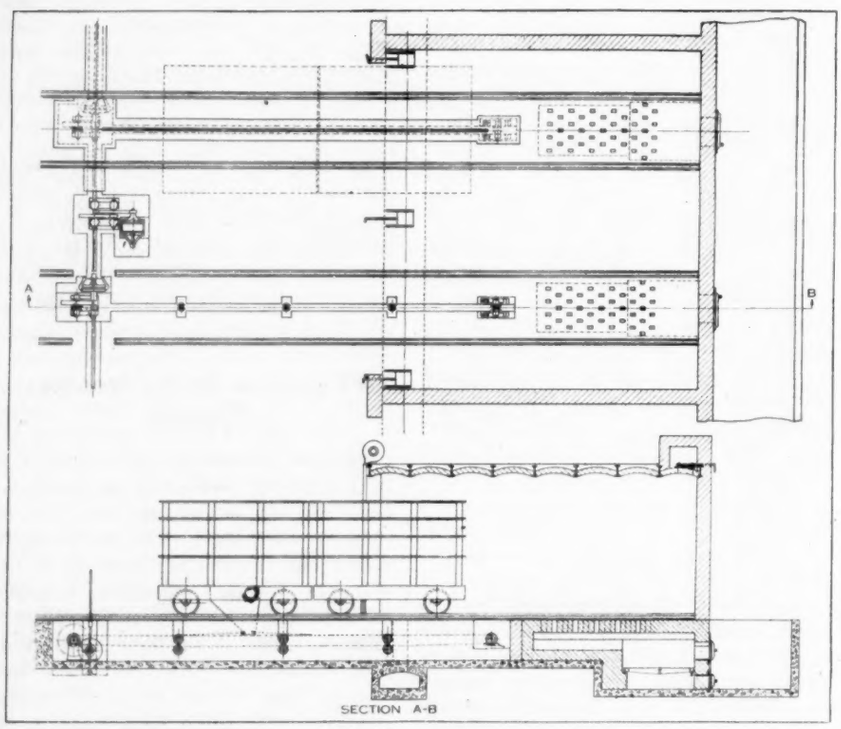
The D. H. Stoll Co., Buffalo, manufacturer of presses, dies and special machinery, advises that it recently completed contracts for the equipment of three large plants in the south, one in Colorado and two in Canada. In addition, it has completed miscellaneous equipments for various other plants.

A Machine for Hauling Core Oven Cars

In nearly every foundry the difficulties and expense involved in hauling loaded core trucks in and out of the ovens is a problem not easily solved. The larger the core oven the more difficult the problem becomes. In some foundries a gang of men is employed to move the trucks by hand. The more general practice in large shops is to use a chain fastened to the hoist of the traveling crane; the chain passes over a pulley placed in the floor in front of the oven, one end being fastened to the core car and the other to the hook of the crane hoist. This method of hauling oven cars, although an improvement over hand labor, is slow and cumbersome at the best. The crane can only handle one oven at a time and considerable time is wasted in shifting the tackle; also if the head room is low, the crank hook in some cases cannot be hoisted high enough to do the work satisfactorily. The greatest objection to this method, however, is that it ties up the crane and takes it from other work, usually at a time when it is most needed. In a large foundry the demands on the traveling crane are incessant, and if it is used for hauling core oven cars in addition to its other work, serious delays in molding operations are often of frequent occurrence.

To relieve the traveling crane of this work and provide a more satisfactory method of handling core oven cars, the Whiting Foundry Equipment Co., Harvey, Ill., has devised the apparatus illustrated herewith.

It consists of an endless haulage chain passing over a sprocket mounted on a line shaft, which is driven by a reversing motor. The chain lies in a concrete-lined pit or slot in the center of the track and runs over a series of idlers. In large ovens, as shown in the illustration, there are two cars on each track; a plate riveted to the frame of the outer car extends down into the pit and is connected with the chain, thus transmitting the motion to the cars. When connected in this manner the chain does not extend more than half way under the oven floor, leaving plenty of room at the rear for the fire box.



PLAN AND SECTIONAL VIEWS OF MACHINE FOR HAULING CORE OVEN CARS

A 10-horsepower, reversing motor is used, connected to the line shaft through two spur gear reductions. The chain sprocket is mounted on a sleeve running loose over the shaft and is connected thereto by a friction clutch acting through a single spur gear reduction. By the use of the clutch any car in a battery may be moved at will. The motor is designed to haul the cars on one track at a time and there is generally one motor for every four tracks. The hauling speed is approximately 25 feet per minute. Fifteen-ton loads can be handled.

Fourteen of these hauling machines have been recently installed by the General Electric Co., there being eight at the Pittsfield, Mass., plant, and six at the Erie, Penn., foundry. The accompanying illustration also shows an improved core oven designed by the Whiting Foundry Equipment Co. This oven is planned to occupy a minimum floor space for a given capacity and to have a uniform and even heat distribution. The roof consists of a series of short transverse fire brick arches supported by heavy I-beams instead of the single large arch that is often employed.

Conservative Action Taken On Westinghouse Dividends

The directors of the Westinghouse Electric & Mfg. Co., in connection with the declaration of the resumption of dividends on the capital stock, have issued the following statement:

It was voted to resume dividends on the common stock by the payment of an initial dividend of 1 per cent, payable April 30, 1912, from the last year's earnings. The question of the next dividend will not be considered for six months. The rate will then be decided after a full consideration of the earnings of the company during that period and the prospects for the future. Having in view the uncertainties now surrounding business generally, the necessities of the company in preparing to meet maturing obligations, together with the demand for increasing its business and conserving its facilities, the directors feel that this is quite in line with the conservative management of this great property, whose prospects, in the judgment of the board, are such as to justify the expectation of better returns for the future.

Ore Mines Resume

Work has been resumed at the Dunderland Iron Ore Co.'s mines in Nordland, Norway, according to cable dispatches from Christiania. Work there has been suspended after the collapse of the Anglo-American undertaking. The new life has been put into the workings by the Krupp company, of Germany, which has agreed to advance $1,000,000 and take half of the first year's production of ore, which is estimated at 200,000 tons.

Plan is Abandoned

The State Line & Lake Erie Railroad Co., organized some years ago by the Jones & McLaughlin Steel Co. and intended to form a part of its new railroad between Pittsburgh and Geneva, O., has been dissolved by formal order of the common pleas court of Allegheny county. The project has been dropped.

The Gould Balance Valve Co., Kellogg, Ia., advises that it is not planning to enlarge its factory, but that it will enlarge its business.

New Iron and Steel Specifications

Adopted at the Recent Meeting of the A. S. T. M. for Locomotive Boiler and Fire Box Steel—Boiler Tubes, Axles, Shafts and Annealed Steel Forgings

Standard Specifications for Annealed Steel Forgings for Locomotive Manufacture

1.—The steel shall be made by the open-hearth process.

2.—Each forging shall be allowed to become cold after forging; shall then be reheated to the proper temperature to refine the grain, and allowed to cool slowly.

Chemical Properties and Tests

3.—The steel shall conform to the following requirements as to chemical composition:

	Per cent.
Manganese	not over 0.70
Phosphorus	not over 0.05
Sulphur	not over 0.05

4.—To determine whether the material conforms to the requirements as to chemical compositions specified in Section 3, an analysis shall be made by the manufacturer from a test ingot taken during the pouring of each melt. A copy of this analysis shall be given to the purchaser or his representative.

A check analysis may be made by the purchaser from one forging representing each melt, and this analysis shall conform to the requirements specified in Section 3. Drillings may be taken from the end, parallel to the axis, at any point one-half the distance from the center to the surface; or from a broken tension test specimen.

Physical Properties and Tests

5.—The steel shall conform to the following minimum requirements as to tensile properties:

Tensile strength, pounds per square inch	80,000
Yield point, pounds per square inch, tensile strength	0.5
Elongation in 2 inches, per cent	22
Reduction of area, per cent	35

The yield point shall be determined by the drop of the beam of the testing machine.

6.—The test specimen shall bend cold through 180 degrees around a 1-inch flat mandrel, having a rounded edge of ½-inch radius, without fracture on the outside of the bent portion.

Bend tests may be made by pressure or by blows.

7.—(a) Tension and bend test specimens shall be taken from the forging or from the full-size prolongation of the same; the axis of the specimen shall be located at any point one-half the distance from the center to the surface and shall be parallel to the axis of the forging. When the specimen is taken from the end of the forging with a hollow drill, as in the case of driving axles, the hole made by the drill shall not be more than 2 inches in diameter nor more than 4½ inches deep.

Bend test specimens shall be ½ inch square in section, and not over 6 inches in length.

8.—One tension and one bend test shall be made from each melt.

9.—If the results of the physical tests of any lot of forgings do not conform to the requirements specified in Sections 5 and 6, the manufacturer may re-anneal such lot. Retests shall then be taken by the purchaser, and these shall govern the acceptance or rejection of the lot.

Workmanship and Finish

10.—The forgings shall conform in sizes and shapes to the requirements given on the order of the purchaser or the drawing sent with it. In centering, 60-degree centers with clearance drilled at point shall be used.

11.—The finished forgings shall be free from injurious seams, slivers, flaws, and other defects, and shall have a workmanlike finish.

Marking

12.—The melt number and the name or initials of the manufacturers shall be legibly stamped on one end of each forging.

Inspection and Rejection

13.—(a) The inspector representing the purchaser shall have free entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works which concern the manufacture of the material ordered. The manufacturer shall afford the inspector, free of cost, all reasonable facilities to satisy him that the forgings are being furnished in accordance with these specifications. Tests and inspection at the place of manufacture shall be made prior to shipment.

(b) The purchaser may make the tests to govern the acceptance or rejection of material in his own laboratory or elsewhere. Such tests, however, shall be made at the expense of the purchaser.

(c) All tests and inspection shall be so conducted as not to interfere unnecessarily with the operation of the works.

14.—Unless otherwise arranged, any rejection based on tests made in accordance with Section 13(b) shall be reported within five working days from the receipt of samples.

15.—Samples tested in accordance with Section 13(b), which represent rejected material, shall be preserved for two weeks from the date of the test report. In case of dissatisfaction with the results of the tests, the manufacurer may make claim for a rehearing within that time.

Standard Specifications for Iron Boiler Tubes for Locomotive Use

Manufacture

1.—(a) The tubes shall be made from knobbled, hammered charcoal iron.

(b) The tubes shall be lap-welded.

Physical Properties and Tests

2.—(a) Quench-bend Tests.—Strips ½ inch in width by 6 inches in length, planed lengthwise from tubes, when heated to a cherry red and quenched at once in water the temperature of which is 80 degrees Fahr., shall bend in opposite directions at each end without showing cracks or flaws.

(b) Nick-bend Tests.—Strips ½ inch in width by 6 inch in length, planed lengthwise from tubes, when nicked and broken by light blows, shall show a wholly fibrous fracture.

3.—Coupons 12-inch long, cut from a tube, shall be heated for a length of 5 inches to 1,200 to 1,400 degrees Fahr., placed in a vertical position, and a smooth-taper steel pin at 600 to 800 degrees Fahr., forced into the end of the tube by light blows of a 10-pound hammer. Under this test the tube shall expand to 1⅛ times its original diameter without splitting or cracking. The pin shall be of tool steel and shall have a taper of 1½ inches per foot of length. In making this test, care shall be taken to see that the end of the tube is smoothly trimmed.

4.—Coupons 2½ inches long, cut from a tube, shall stand crushing longitudinally to a height of 1⅛ inches without splitting in either direction or opening at the weld.

5.—Each tube shall be subjected by the manufacturer to an internal hydraulic pressure of between 500 and 750 pounds per square inch.

6.—In case of doubt as to the quality of material, the following test shall be made to detect the presence of steel. A cross-section of tube shall be turned or ground to a perfectly true surface, polished free from dirt or cracks, and etched until the soft parts of the tube are sufficiently dissolved for the iron tube to show a decided ridged surface, with the weld very distinct, while a steel tube would show a homogeneous surface.

7.—One tube from each lot of 250 or fraction thereof shall be tested as specified in Sections 2, 3 and 4. Each tube shall be tested as specified in Section 5.

8.—(a) If the tube originally selected to represent a lot fails to meet the requirements of Sections 2, 3 or 4, that tube will be rejected; and the inspector will take two more from the same lot and subject both to the same tests as the one that failed. Both of these tubes shall be found satisfactory in order that the lot may be accepted.

(b) Tubes which fail to meet the requirements of Section 5 will be rejected.

Standard Minimum Weights

9.—The standard minimum weights for tubes of various outside diameters and thicknesses, are as follows:

Table of Standard Minimum Weights

Thickness.		Weight, pounds per foot of length. Outside diameter, inches.			
B. w. g.	Inch.	1¾	2	2¼	2½
13	0.095	1.65	1.91	2.16	....
12	0.110	1.89	2.17	2.46	2.73
11	0.125	2.07	2.38	2.70	3.02
10	0.135	2.29	2.64	2.99	3.37

Workmanship and Finish

10.—The finished tubes shall be circular within 0.02 inch and the mean diameter shall

be within 0.015 inch of the size ordered. They shall be within 0.01 inch of the thickness specified, except at the weld, where an additional thickness of 0.015 inch shall be allowed. They shall not be shorter than the length ordered, but may exceed this by 0.125 inch.

11.—The finished tubes shall have a smooth surface, free from laminations, cracks, blisters, pits, and imperfect welds, and shall have a workmanlike finish. They shall be free from kinks, bends and buckles, and evidences of unequal contraction in cooling or injury in manipulation.

Marking

12.—"Knobbled charcoal, tested to 500 pounds pressure," shall be legibly marked at the middle of the length of each tube.

Inspection and Rejection

13.—The inspector representing the purchaser shall have free entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works which concern the manufacture of the material ordered. The manufacturer shall afford the inspector, free of cost, all reasonable facilities to satisfy him that the material is being furnished in accordance with these specifications. All tests and inspection shall be made at the place of manufacture prior to shipment.

14.—Tubes when inserted in the boiler shall stand expanding and beading without splitting or breaking. Tubes which fail in this manner will be rejected and the manufacturer notified.

Standard Specifications for Heat Treated Carbon Steel Axles, Shafts, and Similiar Objects

Manufacture

1.—The steel shall be made by the open-hearth or by any other approved process.

2.—A sufficient amount of discard shall be made from the top of each ingot to insure freedom from injurious piping and undue segregation.

3.—Axles, shafts, or similar objects shall be allowed to become cold after forging, shall be reheated to the proper temperature to refine the grain, and quenched in some medium; and then reheated to the proper temperature for annealing. (A group thus reheated shall be known as a quenching charge.)

4.—Before offering the parts for test, warped axles, shafts or similar objects shall be straightened hot, that is, at a temperature above 900 degrees Fahr.

Chemical Properties and Tests

5.—The steel shall conform to the following requirements as to chemical composition:

	Per cent.
Carbon	not over 0.60
Manganese	0.40 to 0.80
Phosphorus	not over 0.05
Sulphur	not over 0.05

6.—A check analysis shall be made from one axle, shaft, or similar object representing each melt, and this analysis shall conform to the requirements specified in Section 5. Drillings shall be taken from a crop end, parallel to the axis, at any point one-half the distance from the center to the surface.

In addition to the complete analysis, a phosphorus determination may be made by the purchaser from each broken tension test specimen, and this determination shall conform to the requirement for phosphorus specified in Section 5.

Physical Properties and Tests

7.—The steel shall conform to the following minimum requirements as to tensile properties:

Tensile strength, pounds per square inch	85,000
Elastic limit, pounds per square inch.	50,000
Elongation in 2 inches, per cent.	22
Reduction of area, per cent.	45

The elastic limit shall be determined by means of an extensometer. For loads above 8,000 pounds (40,000 pounds per square inch), each increment of load shall not be more than 200 pounds (1,000 pounds per square inch).

8.—The test specimen shall bend cold through 180 degrees around a 1-inch flat mandrel having a rounded edge of ½-inch radius, without fracture on the outside of the bent portion. The form and suggested dimensions of the mandrel are shown in Fig. 1.

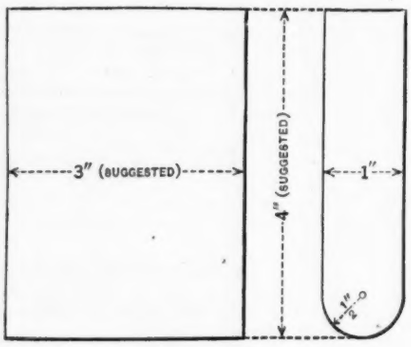


FIG. 1—MANDREL FOR BENDING TESTS

Bend tests may be made by pressure or by blows.

9.—(a) Tension and bend test specimens shall be taken from the crop end of the axle, shaft, or similar object; the axis of the specimen shall be located at any point one-half the distance from the center to the surface, and shall be parallel to the axis of the axle, shaft, or similar object. A full-size prolongation shall be left on each axle, shaft, or similar object.

(b) Tension test specimens shall be of the form and dimensions shown in Fig. 2.

Bend test specimens shall be ½ inch square in section, and not over 6 inches in length.

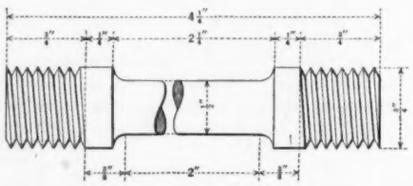


FIG. 2—TENSION TEST SPECIMENS

10.—One tension and one bend test shall be made from each annealing charge. If more than one quenching charge is represented in one annealing charge, one tension and one bend test shall be made from each quenching charge. If more than one melt is represented in an annealing charge, one tension and one bend test shall be made from each melt.

11.—If the results of the physical tests of any quenching charge of axles, shafts, or similar objects, do not conform to the requirements specified in Sections 7 and 8, the manufacturer may re-treat each such treating-plant quenching charge. Retests shall then be taken by the purchaser, and these shall govern its acceptance or rejection.

Workmanship and Finish

12.—The axles, shafts, or similar objects shall conform in sizes and shapes to the requirements given on the order of the purchaser or the drawing sent with it; and unless otherwise specified, shall be rough-turned with an allowance of ⅛ inch on the surface for finishing, except on axle collars, which shall be left rough-forged. In centering, 60-degree centers with clearance drilled at point shall be used.

13.—The finished axles, shafts, or similar objects shall be free from injurious seams, slivers, flaws and other defects, and shall have a workmanlike finish.

Marking

14.—The melt number shall be legibly stamped on the rough-forged axle collar. After rough-turning, the manufacturer's name, melt number, individual axle or shaft number, and inspector's mark, shall be legibly stamped at a place indicated by the purchaser, except at any point between the rough axle collars.

Inspection and Rejection

15.—(a) The inspector representing the purchaser shall have free entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works which concern the manufacture of the material ordered. The manufacturer shall afford the inspector, free of cost, all reasonable facilities to satisfy him that the axles, shafts, or similar objects are being furnished in accordance with these specifications. Tests and inspection at the place of manufacture shall be made prior to shipment.

(b) The purchaser may make the tests to govern the acceptance or rejection of material in his own laboratory or elsewhere. Such tests, however, shall be made at the expense of the purchaser.

(c) All tests and inspection shall be so conducted as not to interfere unnecessarily with the operation of the works.

16.—(a) Axles, shafts, or similar objects which show injurious defects while being finished by the purchaser, will be rejected and the manufacturer notified.

(b) Unless otherwise arranged, any rejection based on tests made in accordance with Section 15 (b) shall be reported within five working days from the receipt of samples.

17.—Samples tested in accordance with Section 15 (b), which represent rejected material, shall be preserved for two weeks from the date of the test report. In case of dissatisfaction with the results of the tests, the manufacturer may make claim for a rehearing within that time.

Standard Specifications for Locomotive Boiler and Firebox Steel

1.—There shall be two grades of boiler steel, namely: Flange and firebox.

Manufacture

2.—The steel shall be made by the open-hearth process.

Chemical Properties and Tests

3.—The steel shall conform to the following requirements as to chemical composition:

	Flange. Per cent.	Firebox. Per cent.
Phosphorus (acid)	not over 0.05	not over 0.04
Phos. (basic)	not over 0.04	not over 0.035
Sulphur	not over 0.05	not over 0.04
Copper	not over 0.05	not over 0.05
Manganese	0.30 to 0.60	0.30 to 0.50

4.—To determine whether the material conforms to the requirements as to chemical composition specified in Section 3, an analysis shall be made by the manufacturer from a test ingot taken during the pouring of each melt. A copy of this analysis shall be given to the purchaser or his representative.

A check analysis may be made by the purchaser from a broken tension test specimen representing each plate as rolled, and this analysis shall conform to the requirements specified in Section 3.

Physical Properties and Tests

5.—The steel shall conform to the following requirements as to tensile properties:

Flange.	
Tensile strength, pounds per square inch	55,000-65,000
Yield point, pounds per square inch	0.5 tens. str.
Elongation in 8 inches, per cent	1,500,000
	Tens. str.

Firebox.	
Tensile strength, pounds per square inch	52,000-62,000
Yield point, pounds per square inch	0.5 tens. str.
Elongation in 8 inches, per cent	1,500,000
	Tens. str.

The yield point shall be determined by the drop of the beam of the testing machine.

6.—The following modifications will be allowed in the requirement as to elongation specified in Section 5:

(a) For material over ¾ inch in thickness, a deduction of 0.5 from the specified percentage of elongation will be allowed for each increase of ⅛ inch in thickness above ¾ inch.

(b) For material ¼ inch or less in thickness, the elongation will be measured on a gage length of 24 times the thickness of the material.

7.—(a) Cold-bend Tests.—The test shall be made on the material as rolled.

(b) Quench-bend Tests.—The test specimen, before bending, shall be heated to a light cherry red as seen in the dark (not less than 1,200 degrees Fahr.) and quenched in water the temperature of which is between 80 and 90 degrees Fahr.

(c) The specimens for cold-bend and quench-bend tests shall bend through 180 degrees without fracture on the outside of the bent portion, as follows: For material less than ¾ inch in thickness, flat on themselves; for material ¾ to 1¼ inch in thickness, around a pin the diameter of which is equal to 1½ times the thickness of the specimen; and for material over 1¼ inch in thickness, around a pin the diameter of which is equal to twice the thickness of the specimen.

(d) Bend tests may be made by pressure or by blows.

8.—For firebox steel, a sample taken from a broken tension test specimen shall not show any single seam or cavity more than ¼ inch long, in either of the three fractures obtained in the test for homogeneity, which shall be made as follows:

A portion of the broken tension test specimen is either nicked with a chisel or grooved on a machine, transversely, about 1-16 inch deep, in three places about 2 inches apart. The first groove is made on one side, 2 inches from the square end of the specimen; the second, 2 inches from it on the opposite side; and the third, 2 inches from the last, on the opposite side from it. The specimen is then put in a vise, with the first groove about ¼ inch above the jaws, care being taken to hold it firmly. The projecting end of the test specimen is then broken off with a number of light blows of a hammer, the bending being away from the groove. The specimen is broken at the other two grooves in the same manner. The object of this test is to open and render visible to the eye any seams due to failure to weld up or to interposed foreign matter, or any cavities due to gas bubbles in the ingot. After rupture, one side of each fracture is examined, a pocket lens being used if necessary, and the lengths of the seams and cavities are determined.

9.—Tension and bend test specimens shall be taken from the finished rolled product, and shall be of the full thickness of material as rolled.

Tension test specimens shall be of the form and dimensions shown in Fig. 1.

The sheared edges of bend test specimens shall be milled or planed.

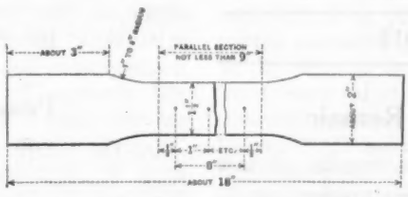


FIG. 1—TEST SPECIMEN FOR BOILER AND FIRE BOX STEEL

10.—One tension, one cold-bend, and one quench-bend test shall be made from each plate as rolled. If any test specimen develops flaws, or if a tension test specimen breaks outside the middle third of the gage length, it may be discarded and another specimen substituted therefor.

Permissible Variations in Weight and Gage

11.—When Ordered to Gage.—Plates will be accepted if they measure not more than 0.01 inch below the ordered thickness.

An excess over the nominal weight corresponding to the dimensions on the order will be allowed for each plate, if not more than that shown in the following table, one cubic inch of rolled steel being assumed to weigh 0.2833 pound.

Thickness order. inches.	Nominal weight, pounds per square foot.	Allowable Excess (Expressed as Percentage of Nominal Weight). For width of Plate as follows: Up to 50 inches.	50 to 70 inches.	75 inches and over.	Up to 75 inches.	75 to 100 inches.	100 to 115 inches.	115 inches and over.
1/8 to 5/32	5.10 to 6.37	10	15	20	..	..	..	..
5/32 to 3/16	6.37 to 7.65	8.5	12.5	17	..	..	..	..
3/16 to 1/4	7.65 to 10.20	7	10	15	..	..	..	..
¼	10.20	..	..	..	10	14	18	..
5/16	12.75	..	..	..	8	12	16	..
3/8	15.30	..	..	..	7	10	13	17
7/16	17.85	..	..	..	6	8	10	13
½	20.40	..	..	..	5	7	9	12
9/16	22.95	..	..	..	4.5	6.5	8.5	11
5/8	25.50	..	..	..	4	6	8	10
Over 5/8	.....	..	..	..	3.5	5	6.5	.. 9

Finish

12.—The finished material shall be free from injurious seams, slivers, flaws, laminations, and other defects and shall have a workmanlike finish.

Marking

13.—The melt or slab number, name of the manufacturer, grade, and lowest tensile strength specified, shall be legibly stamped on each plate. The melt or slab number shall be legibly stamped on each test specimen representing that melt or slab.

Inspection

14.—The inspector representing the purchaser shall have free entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works which concern the manufacture of the material ordered. The manufacturer shall afford the inspector, free of cost, all reasonable facilities to satisfy him that the material is being furnished in accordance with these specifications. All tests and inspection shall be made at the place of manufacture prior to shipment, and shall be so conducted as not to interfere unnecessarily with the operation of the works.

Newark Foundrymen's Association

At the regular monthly meeting of the Newark Foundrymen's Association, held at the Washington Restaurant, Newark, N. J., Wednesday evening, April 3, Thomas Liggett Jr., of the United States Sherardizing Co., Newcastle, Pa., addressed the members upon the sherardizing process of galvanizing. The address was illustrated with lantern slides. Mr. Liggett recently addressed the Philadelphia Foundrymen's Association upon a similar subject. The committee of the association recently appointed to protest against the enactment of the proposed state bill prohibiting the employment of women in foundries reported that it had appeared before the legislative committees at Trenton and had represented the cause of the foundrymen. The usual dinner preceded the meeting. The annual meeting of the association will be held in May, at which time the election of officers will take place.

The Blaw Steel Centering Co., Pittsburgh, has offered prizes for the best sets of plans and specifications for small residences, to be submitted by May 15, 1912. The prizes are as follows: $100 for the best set of plans, $75 for the next best set, $50 for the third best, and $25 each for the three next best sets of plans. The competition is open to everybody.

THE IRON TRADE REVIEW

DEVOTED TO THE IRON, STEEL, MACHINERY AND FOUNDRY INDUSTRIES

Published Every Thursday by

The Penton Publishing Company

CLEVELAND

CHICAGO - - - - - - - - - - 1328 Monadnock Blk.
CINCINNATI - - - - - - - - - 503 Mercantile Library Bldg.
NEW YORK - - - - - - - - - - 1115 West St. Bldg.
PITTSBURGH - - - - - - - - - 2148-49 Oliver Bldg.
WASHINGTON, D. C. - - - - - - - - - Hibbs Bldg.
BIRMINGHAM, ENG. - - - - - - - - Princes Chambers

Subscription, United States and Mexico $4.00 per year
Canada and other Foreign Countries $5.50 a year

Copies published three months or more previous to date of current issue, 25 cents each

All communications relating to changes of advertising copy, discontinuances, etc., must be received ten days prior to to the next publishing date.

Entered at the Postoffice at Cleveland as Second Class Matter

Copyright 1912, by the Penton Publishing Co.

Cleveland, April 11, 1912

Open Market Conditions Remain

So much was said in the last six months of last year by way of emphasizing that open market conditions prevailed in the finished steel trade, when prices were declining, that it is well to point out that now when they are advancing open market conditions also prevail. Conditions in this advancing market are markedly similar to those which prevailed years ago when the market advanced under open conditions, and are strikingly dissimilar from those which prevailed in more recent times when prices advanced in a controlled market. In a controlled market, the advance is uniform and practically instantaneous all along the line. In an open market, the advance is irregular. One seller after another withdraws its old price and starts quoting a new and higher price. At first it books no business at the new figure, but later, as more and more sellers advance their minimum, it begins to book business at the new figure, until when all sellers have come up to the new level, it may be getting more than its usual share of the business going. This is perfectly natural. When a seller first advances his price, his customers are disgruntled and will not buy, but later they get over the feeling, and the result is that if all sellers are quoting a given price, the one that has been quoting the advanced price the longest is the one that gets the largest share of business.

The present condition in the finished steel market, and particularly the position in bars, plates, shapes and sheets is one which it would well pay the Hon. Augustus O. Stanley and a number of other gentlemen down in Washington to study carefully. By their questioning of steel manufacturers, who have appeared before them at the various "investigations" of the past ten months, it appears that they started their work so obsessed with the idea that in an active market there is always a wide range of selling prices that the most painstaking efforts of witnesses failed to disabuse their minds of the peculiar notion. They could not understand that a seller of steel could find out, or at least find out in less than a month or two (perhaps having regard to the time it requires a Congressional investigating committee to find out anything) what prices his competitors were asking. What has occurred in the past few weeks has shown very clearly how quickly sellers do find out what their competitors are doing, even though it is more difficult to get the news when they are advancing prices than when they are cutting them. In the latter case, they have the active assistance of the buyers. The experience has also shown how ready sellers are to fall in line for an advanced price when they find a start has been made. They are actually willing to let a few sales slip by, in the interim, while their customers are getting educated up to paying the advanced price. All this is strictly in line with open market conditions, and the illustration is a good one for those outside the steel industry, who nevertheless see fit to take an interest in it, to study. If they undertake the study, they have our best wishes that they may learn something from it. There is nothing to warrant a view that the steel market is like the conception frequently given of the stock market, that "it never advances; it is always put up."

Peace in World's Business

At the recent meeting of the Staffordshire Iron and Steel Institute, Mr. Harold Jeans, of London, read a paper on "The Control of Prices in the Export Steel Trade". Mr. Jeans discusses at considerable length various methods of controlling prices which have been adopted in past years in the United States and European countries and expresses a decided preference for a binding agreement among manufacturers which he thinks is far superior to other forms of co-operation. Mr. Jeans discusses the Brussels conference and expresses the opinion that the ostensible object of promoting friendly feeling among iron and steel producers in the different countries represented was not the real object. He declares that British and continental steel manufacturers who were asked to send representatives to the conference unanimously adopted the view that price regulation in the export iron and steel markets was the object. He says that those who attended were interested in nothing but the possibility of forming some such arrangement. After wandering into what seems to us an irrelevant discussion of the Hill ore lease and other subjects, Mr. Jeans returns to his original subject and concludes that while much good can come of conferences, it is doubtful whether they can be productive of permanent, definite and tangible results. He remarks that the movement in the United States, with its "shadowy kind of regulation" has been fostered by personal contact and good fellowship which is impossible between different countries.

We are perfectly willing to admit that except to a man of great breadth of view like Judge Gary, it does seem like dreaming to think of bringing about more friendly relations among those who are engaged in international business. We are confident, however, that Judge Gary had no other idea in mind. In call-

ing the Brussels meeting, he could not seriously have entertained the expectation that definite price agreements or any kind of price agreements would result from the conference, but he did hope that the personal contact of the leaders of the iron and steel business of the world would result in good to all concerned, and we do not believe that he has been entirely disappointed.

These are days of mighty changes. We are hearing a great deal about peace agreements to prevent war. The temporary failure of the recent peace treaties with England and France was due largely to differences of opinion about details, and it is not improbable that before many years have passed, the great nations of the world will agree to treaties which will insure peace among them. Is it too much to expect that business men will be actuated by the same or similar motives and be willing to see the world's business conducted on the same basis?

Undue Stress on Some Current Events

Thomas D. West, well known as a writer on foundry practice, has written a letter to THE IRON TRADE REVIEW describing what he considers some of the signs of the times as indicating that terrible conditions will exist in this country unless "those who have learned by experience the essentials of management and production of the commodities of civilized life awaken and combat agencies that are leading the inexperienced into a chaos of misery and suffering." Mr. West dwells especially on the tendency of daily newspapers to give large space to insignificant events and comparatively little space to the real achievements of men. He cites as examples of unfortunate tendencies that a larger amount of space is given to pugilism than to the discovery of the south pole. He refers to the recent welcome to Cleveland extended to a prizefighter by over 100,000 people, a welcome which has never been received by a president of the United States or any other eminent person.

The thoughtful students of events can without much difficulty discover signs of the times which do not portend good for the country. We are passing through a period of agitation and unrest and unless the sober common sense of the American people is successfully appealed to by men who calmly and earnestly combat modern fallacies, positively dangerous policies may be adopted. We believe, however, that it is important to preserve an optimistic frame of mind and not to become pessimistic on account of some features of daily life which may be deplorable, but, at the same time, of no great significance. Newspapers are not and perhaps cannot be conducted as many of us would like to see them, and it is impossible for us to apportion their space as we should like to see it used. But the man who is really determined to become well informed on the significant events of the day can do so with the assistance of the better class of newspapers and magazines, and, in the long run, the important events are bound to receive attention. The reception which worries our friend was nothing more than a St. Patrick's Day frolic. It was due largely to idle curiosity and local good feeling toward a young man not destitute of good qualities.

Cheer up, Mr. West. Things are not always as bad as they seem, and forces of tremendous power for good as well as those for evil are at work all the time. The country is not as near as you think it is to the brink of a bottomless pit.

Practical Men Needed

The *New York Commercial Bulletin,* in an extended editorial on "The Futility of Partisan Investigation", shows how expensive and how barren of results have been the investigations of the Stanley committee and other congressional committees, and concludes that really useful investigations must be made by expert commissions and not by partisan legislative committees. This is so clearly apparent that it would seem hardly necessary to state it, and yet the desire of politicians to make capital, especially during presidential years, is so strong that many thousands of dollars are expended with very little practical results. A commission is a much better form for investigation, provided the commission is entirely free from prejudice and is made up of practical men.

There is now a proposal before congress for a federal commission on industrial relations. The plan originated with an eminently respectable committee, but very few of the more than 50 members have had experience in manufacturing or are in any way directly connected with any manufacturing industry. Some of the members have been rather noted for talking without being well informed and for having somewhat visionary notions. However, with one sentence of a pamphlet recently issued by the committee concerning the proposed commission, we heartily agree. It is this: "In make-up the commission must successfully lay claim to the confidence of industrial America from top to bottom and from end to end." If we could have a commission of that kind thoroughly to investigate rates of wages, grievances of workmen, boycotts, resorts to violence, abuses of labor unions and employers' associations and other subjects relating to conditions of work, results of the highest importance would be obtained. The bill should be so worded as to assist in obtaining as members of the commission representatives of employers and employes and of men not belonging to either class. Of course, much will depend upon the judgment of the appointing power, but something can be done in the wording of the bill.

Technical Extension

Editor THE IRON TRADE REVIEW:—

Your editorial on "Extending the Usefulness of Universities" by a technical extension plan is excellent. I should like to see a few of the smaller "nuts to crack" submitted to the mechanical departments of some of our universities and technical schools and know of the answers returned.

In medical schools, hospitals are maintained and clinics operated for the purpose of having practical work for students. In technical schools, this is duplicated in a way by work in laboratories, but the work is meager compared with outside practice and seldom takes into account cost of plant, material, labor and worth of output, which are the measures of success in business building. In order to increase the mercantile availability of a technical education, everything that pertains to real practice that can be given to the student will give him standards for comparison and ideas on accomplishment that must be for his advantage. The student's advantage is the school's advantage. The professor is both master and servant of each.

GEORGE N. COLE.

New York, March 25, 1912.

Iron and Steel Securities

While trading was not as active on the New York stock exchange last week as during the preceding week, the tone of the market continued strong and many new high price levels for the year were established.

Monday, the advance in copper metal caused copper stocks to advance to the highest prices in more than a year; coal mining was temporarily suspended in Pennsylvania; wheat declined and cotton advanced. Tuesday, stocks opened strong and advanced to a new high level; Steel common and Union Pacific under selling pressure; London money market firmer. Wednesday, the market was less active and irregular; British coal miners voted not to return to work until further concessions were assured, but the impression prevailed that the strike was nearly at an end. Thursday, the market was buoyant under the leadership of Steel common; corn advanced to the highest ever quoted in the month of April; cotton was higher. Friday, no trading because of Good Friday. Saturday, the market was buoyant, prices again advancing to a new high average for the year.

Money on call advanced to 5 per cent for the first time since last December; during the week the range was 5 and 2½ per cent. Time money enjoyed an increased demand, rates being higher at the close. The actual condition of clearing house institutions showed loans decreased $26,510,000; net deposits decreased $32,178,000; total reserve, $424,510,000, and the excess of reserve $1,936,450, an increase of $1,448,900. Non-member banks and trust companies showed loans increased $13,614,200; net deposits increased $11,474,600; reserve on deposits increased $683,900, and the percentage of reserve, 19.1, against 19.4 the week previous. Fortnightly railroad statistics showed an idle car surplus of 18,708, an increase of 15,665 over the preceding fortnight. Bank clearings increased 8.1 per cent over the preceding week and 11.5 per cent over the corresponding week a year ago. Commercial failures numbered 289, compared with 292 the preceding week and 235 the corresponding week a year ago. Shares were sold to the number of 3,247,774, compared with 4,736,900 the preceding week and 966,100 the corresponding week last year. Bonds, exclusive of government bonds, were sold to the amount of $16,716,000, compared with $19,926,000 the preceding week and $12,501,000 the corresponding week a year ago.

	Clos'g Quo. April 6	Changes in week.	Annual Meeting date 1912	Stock Outstanding	Basis.	Dividend Last Dividend	Dividend Date Last Div. Pay
Allis-Chalmers	2	— 5/8		$19,820,000		.....	
Allis-Chalmers, pr	6	— 1/8		16,050,000	7 cum.	1¾ Q.	Feb., 1904
American Can	27	+6	Feb. 6	41,233,300		.....	
American Can, pr	110½	+6⅛		41,233,300	7 cum.	1¼ Q.	Apr., 1912
Am. Car & Fdy	58¾	+2½	June 27	30,000,000	2	½ Q.	Apr., 1912
Am. Car & Fdy., pr	117	— ¼		30,000,000	7 n. c.	1¾ Q.	Apr., 1912
American Loc	41¼	+2¼	Oct. 15	25,000,000	5	1¼ Q.	Aug., 1908
American Loc., pr	108½	— ½		25,000,000	7 cum.	1¾ Q.	Apr., 1912
American Ship	47⅞	+ ¼	Oct. 9	7.600,000	4	2 Q.**	June, 1911
American Ship, pr	101	—2¾		7,900,000	7 n. c.	1¾ Q.	Apr., 1912
Am. Steel Foundries	33	+1¼	Mar. 21	17,184,000	5	1¼ Q.	May, 1911
Barney & Smith	10	—5	June 4	2.000,000	4	1 Q.	Dec., 1907
Barney & Smith, pr	85	.....		2,500,000	8 cum.	2 Q.	Dec., 1911
Bethlehem Steel	35¾	+2¼	April 2	14,862,000		.....	
Bethlehem Steel, pr	63½	+1½		14,908,000	7 n. c.	¾ Q.	Feb., 1907
Cambria Steel	44⅜	+ ⅜	Mar. 19	45,000,000*	5	1¼ Q.	Feb., 1912
Cambria Iron	44	.....		8,468.000*	4	2 S. A.	Apr., 1912
Chicago Pneumatic Tool	49½	— ½	Feb. 19	6,448,800	4	1 Q.	Apr., 1912
Colorado Fuel	31¼	+1	Oct. 21	34,235,500		1¾ Q.	April, 1902
Crucible Steel	125⅝	+ ⅞	Nov. 15	24,578,400		.....	
Crucible Steel, pr	84	+2		25,000,000	7 cum.	1¾ Q.	Mar., 1912
Empire Steel	10	.....	Feb. 28	1,254.770		.....	
Empire Steel, pr	36	.....		2,500,000	6 cum.	2 S. A.	July, 1911
Fay & Egan	70	.....	Feb. 20	1.000,000	7	1¾ Q.	Nov., 1908
Fay & Egan, pr	110	.....		1.000,000	7 cum.	1¾ Q.	Feb., 1912
General Electric	170	+4¼	May 14	77,281,200	8	2 Q.	Apr., 1912
Harbison-Walker	40	.....	Jan. 15	18,000,000	2	½ Q.	Mar., 1912
Harbison-Walker, pr	100	.....		9.600,000	6 cum.	1½ Q.	Apr., 1912
International Pump	32⅝	+2⅝	Dec. 10	17,762,500		½ Q.	Apr., 1905
International Pump, pr	84⅜	+1½		11,350,000	6 cum.	1½ Q.	May, 1912
Lackawanna Steel	29	.....	Mar. 13	34,978,000		.....	
Lake Sup. Corp	30¼	+ ½	Oct. 2	40,000,000		.....	
New York Air Brake	57	+3⅜	Mar. 13	10,000,000	6	1½ Q.	July, 1911
Niles-Bement-Pond	95	.....	Feb. 7	8,500,000	6	1½ Q.	Mar., 1912
Niles-Bement-Pond, pr	101	.....		2,000,000	6 cum.	1½ Q.	Feb., 1912
Otis Elevator Co	77	.....	Mar. 18	6,358.600	4	1 Q.	Apr., 1912
Otis Elevator Co., pr	101	.....		6,375,300	6 n. c.	1½ Q.	Apr., 1912
Pa. Steel	60	.....	May 13	10,750,000		.....	
Pa. Steel, pr	101	.....		20,587,500	7 n. c.	3½ S. A.	Nov., 1911
Pittsburgh Coal	21	+1¼	Mar. 12	28,104,600		.....	
Pittsburgh Coal, pr	84½	+2½	Oct. 7	27.071,800	7 cum.	1¼ Q.	Apr., 1912
Pittsburgh Steel Co., pr	102	+ ⅞	Feb. 21	7,000,000	7 cum.	1¾ Q.	Mar., 1912
Pressed Steel Car	36	+3		12,500,000		1 Q.	Aug., 1904
Pressed Steel Car, pr	102	+ ⅝	Nov. 13	12,500,000	7 n. c.	1¾ Q.	Feb., 1912
Pullman	161	+ ⅛	Mar. 7	120,000,000	8	2 Q.	Feb., 1912
Railway Stl. Spring	34	+2½		13,500,000	2	1 S. A.	Oct., 1908
Railway Stl. Spring, pr	101	+ ½	Oct. 16	13,500,000	7 cum.	1¾ Q.	Mar., 1912
Rep. Iron & Steel	23⅝	+1⅝		27,191,000		.....	
Rep. Iron & Steel, pr	77	+5	Mar. 13	25,000,000	7 cum.	1¾ Q.	Jan., 1912
Sloss-Sheffield	47½	+3⅜		10,000,000	5	1¾ Q.	Sept., 1910
Sloss-Sheffield, pr	105	—7	June 26	6,700,000	7 n. c.	1¾ Q.	Apr., 1912
U. S. Pipe & Fdy. Co	16¾	+ ⅜		12,500,000		1 Q.	Dec., 1907
U. S. Pipe & Fdy. Co., pr	54	+ ½	April 15	12,500,000		1¼ Q.	June, 1911
U. S. Steel	72⅝	+5		508,302,500	5	1¼ Q.	Mar., 1912
U. S. Steel, pr	113	+1⅜		360,281,100	7 cum.	1¾ Q.	Feb., 1912
U. S. Steel 5s	102¾	.....	Sept. 17	465,189,500	5	5 Q.‡	
Va. Iron, Coal & Coke	65½	+2½	Oct. 1	9,073,680		.....	Oct., 1907
Westinghouse Air Brake	165	.....	June 12	14,000,000*		5. †	Apr., 1912
Westinghouse Electric	76¾	+ ¼		3,998,700*	7 cum.	1¾ Q.	Apr., 1912

Par value of shares, $100, except those starred (*), $50.
**Includes last 1 per cent payment of 4 per cent extra.
†Stock.
‡Include 2½ regular, 1½ extra and 1 special.

Copper Stocks

New York.—Amalgamated Copper closed 82¾, a net gain of 2.

Boston.—Anaconda closed 44, a net gain of 3½; Calumet & Arizona closed 74, a net gain of 1½; Calumet & Hecla closed 485, a net gain of 18; North Butte Mining closed 33¼, unchanged; Quincy Mining closed 86, a net gain of 2½.

Financial Notes

The International Steam Pump Co. has declared a regular quarterly dividend of 1¼ per cent on the preferred stock, payable May 1.

The Harbison-Walker Refractories Co., Pittsburgh, has declared the regular quarterly dividend of 1½ per cent on preferred stock, payable April 20.

The North Butte Mining Co. has declared a quarterly dividend of 40 cents a share, payable April 20. Three months ago, 30 cents a share was declared.

The General Fireproofing Co., Youngstown, O., has declared its regular quarterly dividend of 1¾ per cent on preferred stock, payable April 1.

OBITUARIES

George E. Davis, one of the leading pioneers in the development of modern bridge shop practice, died Tuesday, March 26, at his home in Athens, Pa., following an attack of pneumonia. He was born in 1842 in Philadelphia, where he studied civil engineering and mechanical work, and later removed to Easton, Pa., where he enlisted in Cooper's Battery B, First Pennsylvania artillery, and was promoted to be a corporal, Oct. 15, 1864. He served until the close of the war, and was mustered out of service with his command June 9, 1865. He went to Athens with Charles Kellogg, in 1865, and was employed in building the wooden bridges for the Lehigh Valley railroad at that place and other points in the vicinity. When Mr. Kellogg built a bridge shop at Athens in 1869, Mr. Davis was made superintendent and he continued in that position under the successive management of Kellogg & Maurice, Union Bridge Co. and the Athens plant of the American Bridge Co. Later he was manager of the Athens plant. After the closing of the Athens plant, up to the date of his death, Mr. Davis acted as master mechanic of the Empire Bridge Co., at Elmira, N. Y., where his services were invaluable and although the company had several times told him that with his declining health it was no longer necessary for him to work, as it needed him more for consultation and advice and that his salary would be continued, yet he carried the full burden of his position to the time when he was prostrated by sickness. Mr. Davis' service as superintendent of the bridge shop at Athens began when the industry was relatively new and some of the tools and many of the shop methods now in general use were developed and introduced by him. His ability to devise methods of doing good shop work with simple and sometimes inadequate tools was marked, and he always had some ingenious method ready when a difficult shop problem was to be solved.

Mr. Davis had always taken a deep interest in the commercial and social affairs of the community. He was one of the most prominent Masons in the vicinity of his home. For several years he had been a thirty-third degree Mason.

Herman Wolf, president of the American Steel Wool Mfg. Co., died recently in New York City. He was 53 years old.

Wm. Eynon, aged 56, superintendent of the Cincinnati Horse Shoe & Iron Co., near Cleves, O., died Friday, March 22, at his home at that place, after a short illness.

Col. Paul Reeves, who, in 1869, founded the brass foundry and smelting business later conducted by Paul Reeves & Son, Philadelphia, died recently at his home in Phoenixville, Pa. He was born Sept. 10, 1837.

Col. T. L. Waggener, a pioneer Colorado railroad builder, died March 10, at Colorado Springs, Colo. He was in charge of the construction of the Cripple Creek Short Line and had also been with the Colorado, Midland & Oregon Short Line. He had resigned as city engineer of Colorado Springs only a week before his death.

Frank B. Manville, an inventor and one of the organizers of the E. J. Manville Machine Co., Waterbury, Conn., died March 29, at his home in Waterville, Conn., age 62. He was the inventor of machines for making hooks and eyes, and of various devices used in the manufacture of bicycle rims.

Charles H. Williamson Sr., one of the pioneers of the stove industry of Philadelphia, and foreman of the Reading Stove Works, died at Reading, Pa., March 31, aged 64. He was connected with the Isaac Sheppard Co., Philadelphia, for many years. He founded the Pennington Stove & Heater Co., Pennington, N. J.

Charles H. Williamson, Sr., one of the pioneers of the stove industry of Philadelphia and foreman of the Reading Stove Works, died at Reading, Pa., March 31, aged 64. He was connected with the Isaac Sheppard Co., of Philadelphia, for many years. He founded the Pennington Stove & Heater Co., Pennington, N. J.

William Ferguson, civil engineer and senior member of the firm of Ferguson & Son, Paterson, N. J., died recently. He was a veteran of the civil war and in 1866 had engaged in engineering practice in Brooklyn. He had served also as assistant engineer on the location and construction of the Schenectady & Mohawk, the Harlem River and other railroads.

Dr. H. W. Spangler, who had been dean of the mechanical and electrical departments of the University of Pennsylvania for 23 years, died at his home recently. He was 54 years of age, had served as an engineer in the navy and had assumed the chair of assistant professor of mechanical engineering at the University of Pennsylvania in 1881.

David D. Jones, a member of "The Old Guard" of the Carnegie employes, and for many years with the Edgar Thomson works of the Carnegie Steel Co., at Braddock, Pa., died at the family home in North Braddock, Sunday, March 31, after a brief illness from pneumonia. He was one of the builders of the Edgar Thomson steel works.

George E. Slater, salesman attached to the Cleveland offices of the Republic Iron & Steel Co., who died March 28, was well known in the trade. For 14 years he had been with the Carnegie Steel Co., at Pittsburgh, and then spent some time in St. Paul for the company. He became Milwaukee representative of the Republic company about a year and a half ago, and was transferred to Cleveland six months ago. He was ill only four days with pleuro-pneumonia. He was 35 years old.

John Smith Sr., aged 74, first superintendent of the blooming mill of the old Ohio Steel Co., Youngstown, O., now part of the Ohio works of the Carnegie Steel Co., died April 4, at the home of his daughter in Woodlawn, Pa. Mr. Smith's first position was in the steel mills of North Chicago. This was in 1875. In 1894, he went to Youngstown and became superintendent of the blooming mill, a position he held until 1898, when he went to Colorado for one year. Then he returned to the Ohio works for one year, following which he went to Ensley, Ala., in the Birmingham district, where he became a factor in the southern milling center. He retired from active duties four years ago.

MEN OF THE IRON TRADE

W. L. Saunders, president of the Ingersoll-Rand Co., will make the commencement address at the Colorado School of Mines, Golden, Colo.

James A. Campbell, president of the Youngstown Sheet & Tube Co., Youngstown, O., has returned from a trip to Hot Springs, Ark. He was accompanied by Mrs. Campbell.

A. L. Hopkins, until recently works manager of the Newport News Shipbuilding Co., Newport News, Va., is now vice president in charge of the New York offices of the company.

A. H. Wiggin, Herman Waldeck and John C. McKeen have been appointed as members of a bankers' committee to represent the banks in the re-organization of the McCrum-Howell Co.

F. E. Keese and **C. Murphy,** mining superintendent and master mechanic respectively of the Oliver Iron Mining Co., were in Princeton, Mich., recently inspecting the company's Stegmiller mine.

John S. Runnells, president of the Pullman Co., who has been ill for some time, is convalescing at the Hotel Brighton, Atlantic City, N. J. His physicians say that a complete recovery is assured.

V. C. Randolph has been appointed master mechanic of the Rochester division of the Erie, the New York, Susquehanna & Western and the New Jersey & New York, succeeding F. G. DeSaussure, transferred.

John J. Utech has been appointed eastern sales agent of the D. Connelly Boiler Co., Cleveland. His office is at 42 Broadway, New York. Mr. Utech also represents the Alliance Machine Co., Alliance, O.

James M. Woodward, formerly engineer of the steamer Corona, has been appointed chief engineer of the Niagara Navigation Co., succeeding George M. Arnold, who has been named as government inspector of boilers.

W. H. Dennes, secretary and treasurer of Grainger & Co., of Louisville, has resigned after several years' service, and is now with Bridgeford & Co., stove founders. He has been succeeded at the Grainger plant by A. P. Sikking.

Porter Pollock and **W. W. McKelvey,** of the William B. Pollock Co., Youngstown, O., who went to Berlin, Germany, about two weeks ago, on a business mission are still at the German capital but expect to return within a few weeks.

Stanley H. Smith, formerly at the Steelton, Pa., plant of the Pennsylvania Steel Co., has opened offices at 420-422 Rockefeller building, Cleveland, and will handle the Cleveland business of the Pennsylvania and Maryland Steel companies.

J. A. Colby and **A. J. Christie** have formed a partnership under the firm name of Colby & Christie for the inspection of materials and workmanship for bridges, viaducts and buildings. Their offices are in the Witherspoon building, Philadelphia.

J. B. Girand, formerly territorial engineer of Arizona, has entered business for himself at Phoenix, Ariz. He has associated with Carl E. Hasse and Frank R. Goodman under the firm name of the Girand Engineering Co., with offices at 301 Fleming block.

J. G. Shillinger, division engineer of maintenance-of-way of the Cleveland, Cincinnati, Chicago & St. Louis railway at Galion, O., has been appointed chief engineer of the Rutland railroad, with headquarters at Rutland, Vt. He succeeds J. C. Irwin, resigned.

Thomas Beaghen Jr. has been appointed master car builder of the Union Tank Line Co., with office at New York, succeeding Charles M. Bloxham. He has been connected with the American Steel Foundries Co. and the United States Metals & Mfg. Co.

G. R. Empson has been chosen president of the Iron River Ore Co., Iron River, Mich., succeeding R. L. Hammond. W. E. Hamell and A. E. Neff, of Gladstone, Mich., have been chosen treasurer and director respectively, succeeding John B. Weimer and Frank Jackson.

William Bishop, who had been connected for six years with the Cincinnati Iron & Steel Co., Cincinnati, as manager of the machinery and equipment department, is now crane representative in Chicago of Manning, Maxwell & Moore, Inc., controlling the Shaw electric cranes.

John R. McCune, president of the Union National bank, and W. D. Uptergraff, both of Pittsburgh, have been elected directors of the Union Switch & Signal Co., of that city. Their election followed the decision of the stockholders to increase the number of directors from seven to nine.

F. M. Bowman, secretary; Wayne Rawley, manager of structural works, and A. Bovard, engineer, of the Riter-Conley Mfg. Co., Pittsburgh, have resigned their positions and are organizing a large manufacturing concern in conjunction with the Blaw Steel Centering Co., Pittsburgh.

N. P. Turner has resigned as chief engineer of the Cuba railroad at Camaguey, Cuba, and is now with L. D. Moore, New York. Mr. Turner will be engaged in mining, engineering and exploration work in the West Indies, Central and South America, with headquarters for the present at Camaguey, Cuba.

Claude J. Peck has been put in charge of the newly opened Cleveland offices of W. P. Snyder & Co., Pittsburgh. The offices are at 1612 Rockefeller building. Associated with the company are the Shenango Furnace Co., the Shenango Steamship Co. and the Shenango Steamship & Transportation Co.

Frank D. Chase, an associate member of the American Society of Civil Engineers, and architect of the Western Electric Co., has opened offices in the People's Gas building, Chicago, for the practice of architecture and industrial engineering, making a specialty of manufacturing plants and mercantile buildings.

Eugene F. Bradt, formerly chief engineer of the Pittsburgh & Lake Angeline Iron Co., has been at work recently on a newly opened property on the Vermillion range, known as the Fargo mine. The property is owned by the head of the Fargo Express Co., Chicago, and is near the Section 30 mine.

F. F. Busteed, who has been general superintendent of the Manitoba division of the Canadian Pacific railway, has been appointed engineer-in-charge of double tracking and grade revision west of Calgary, with headquarters at Kamloops, B. C. D. Coleman, who has been in charge of car service, succeeds Mr. Busteed.

L. B. Morris, who has been New

MEN OF THE IRON TRADE

York sales agent of the Cambria Steel Co., in charge of merchant steel, since 1900, has assumed entire charge of the office in that city under the title of district sales manager. H. L. Waterman, who had been general New York sales agent of the company since 1897 resigned April 1.

J. B. and **R. E. Koon,** consulting engineers, of Chicago, will open an office in Portland, Ore., according to their recent announcement. J. B. Koon has served as chief engineer of the Empire Car Co., of Chicago, and R. E. Koon was formerly connected with Burns & McDonnell, Kansas City, Mo., as engineer in charge of waterworks design.

Irving H. Reynolds, who for the past eight years has been vice president and general manager of the William Tod Co., Youngstown, O., has recently joined the engineering department of the Allis-Chalmers Co., Milwaukee. Mr. Reynolds was connected with the Allis-Chalmers Co. for twenty years and at the time he left, eight years ago, was chief engineer.

A. F. Gross is president of the recently organized Mangan Iron & Steel Co., of Duluth, Minn. P. H. Martin is vice president and treasurer. With William Holton, M. J. O'Brien and P. H. Hamel, they comprise the board of directors. The company, which was organized with a capital of $500,000 to develop lands on the Cuyuna iron range, has drills working.

L. R. Lemoine, Philadelphia, president of the United States Cast Iron Pipe & Foundry Co., has returned home from an inspection trip to Chattanooga, Tenn. Other members of the company who accompanied Mr. Lemoine on the trip were George J. Long, Louisville; E. C. Fuller, Columbus, O.; O. C. Overholt, Scottsdale, Pa.; and W. T. C. Carpenter, East Orange, N. J.

Prof. James F. Kemp gave an illustrated lecture on "Iron Mines in Swedish Lapland" at a meeting of the New York section of the American Institute of Mining Engineers, held in the Engineering Societies building, New York, March 26. At the meeting to be held April 12, Dr. Carlton Ellis will lecture on "Flameless Combustion" as developed by William A. Bone, of England.

O. R. Hamilton has resigned as engineer of the Spring Valley Iron Co., the resignation taking effect May 1. He will open an engineering office in Iron River, Mich. Mr. Hamilton will have associated with him E. L. Laing, who has been retained by the Davidson mine. The new firm will be known as Laing & Hamilton. Both of the engineers are graduates of the Michigan College of Mines.

Dr. Rudolf Diesel, inventor of the Diesel engine, is visiting New York and other cities in this country. He is investigating the progress being made in the United States with oil fuel. Dr. Diesel believes that America, because of its oil supply, is destined to lead the world in the development of oil-fed motive power. He may address several scientific bodies while in this country.

Clarence H. Howard, president of the Commonwealth Steel Co., St. Louis, last week entertained 65 members of the party that accompanied President Taft on his trip down the Mississippi river to New Orleans in 1909. The reception was held at Mr. Howard's new home in St. Louis and the guests were shown about 300 stereopticon slides of river scenes, the Panama canal zone, New Orleans and California.

J. H. Peyton, formerly assistant to the president of the Louisville & Nashville railway, has been appointed chief engineer of construction. The position is a new one, the department of construction having been recently organized. H. C. Williams has been appointed assistant chief engineer of construction and W. E. Smith has been appointed general superintendent of construction. All will be located at Louisville, Ky.

B. M. Waldron is spending a month at his country home at Roxbury, Vt., prior to accepting a position with the American Engineering Co., Philadelphia, Pa., as general foundry superintendent. The company was formerly known as Williamson Bros., and by combining with the American Ship-Windlass Co., and the Taylor Underfeed Gravity Stoker Co., of Providence, R. I., has formed the American Engineering Co.

C. W. Atherly, Basin, Wyo., has been elected president of the recently organized Wyoming Society of Civil Engineers. The organization was formed by the engineers of the Big Horn basin with the view of raising the standard of engineering work, discouraging wild cat land and mining schemes and increasing confidence in legitimate business enterprises. H. T. Nowell, Basin, was elected vice president and M. D. Woolery, Thermopolis, secretary-treasurer.

A. R. Ayers, Cleveland, has been appointed general mechanical engineer of the New York Central lines west of Buffalo. His headquarters will be in Chicago. He had been mechanical engineer at Cleveland of the Lake Shore & Michigan Southern railway, the Indiana Harbor Belt and the Chicago, Indiana & Southern Railway Co. He is a graduate of Cornell university and has been with the Lake Shore & Michigan Southern Railway Co. since 1900.

Warren J. McLaughlin, Iron Mountain, Mich., until recently mining engineer at the Loretto mine, Menominee range, which position he resigned to accept a similar post with M. A. Hanna & Co., Cleveland, has gone to the Trenton district of Ontario to take up his new duties. Mr. McLaughlin has been connected with the Loretto Iron Co. for a number of years and under his direction various notable engineering problems had been solved. It was at this mine that the feat of constructing a new channel for the Sturgeon river was successfully executed.

Guilford Duncan has been elected president of the Ludlow-Saylor Wire Co., St. Louis, succeeding his father, William Duncan, who has been named as chairman of the board. The son has been vice president of the company since 1905, entering the factory in 1902, following his graduation from Yale university. He was secretary from 1902 to 1905 and is 34 years of age. The company is capitalized at $600,000. William Duncan, who will spend his summers abroad, is also president of the Charter Oak Stove & Range Co., and a large stockholder in the Bell Telephone Co., and in the Merchants Bridge & Terminal Railway Co. He was formerly a vice president of the Baltimore & Ohio railroad.

MANY TROUBLES

Result in Receivership of Allis-Chalmers Co.—Stopped Advertising.

The Allis-Chalmers Co., of Milwaukee, was on April 6, placed in the hands of a receiver in the United States district court at Milwaukee, on application of the First National bank and Wisconsin National banks of Milwaukee. Judge A. L. Sanborn appointed as receivers D. W. Call, president of the company, and Gen. Otto H. Falk, vice president of The Falk Co., and president of the Merchants and Manufacturers' Association of Milwaukee.

The receivers were instructed to continue the business of the company so that all of its assets and interests as a going concern will be fully protected. Max W. Babb, general counsel for the company, was appointed attorney and counsel for the receivers.

The receivership is the outcome of a plan of re-organization and re-capitalization which stock and bond holders have been working on for some time.

The plan contemplates the organization of a new corporation with a capital stock of $42,500,000, to be divided into $26,000,000 common and $16,500,000 preferred stock. The preferred is to be cumulative from Jan. 1, 1913, at 5 per cent per annum. From Jan. 1, 1915, the preferred is to bear 6 per cent, and after Jan. 1, 1917, 7 per cent from the beginning, if earned by the new company and declared by the directors. To get a working capital, an assessment of 20 per cent on the present preferred stock and 10 per cent on the present common stock is to be declared.

Participation in the plans and agreement for re-organization is made dependent upon the deposit of stock and bonds with the Central Trust Co., of New York, prior to May 1, 1912.

Causes of the Receivership

An excellent analysis of the difficulties of the Allis-Chalmers Co. is given by W. M. S. Miller, who until a few months ago acted as publicity manager for the company at its general offices in Milwaukee.

"As is well known," said Mr. Miller, "the principal products of Allis-Chalmers Co. are machinery for power plant purposes, with sales dependent upon the building of new power plants, or the enlargement of old ones. Since the panic of 1907 the general business of the country has been at such a low ebb that manufacturing concerns had difficulty in obtaining enough business to keep their shops in operation, making further extensions in most cases entirely out of the question.

"The larger competitors of Allis-Chalmers Co., foreseeing these conditions, have within recent years devoted their energies largely to the exploiting of their lines of smaller apparatus. Their business in the smaller lines reached as high as from 60 per cent to 70 per cent of their total sales. Incidentally, they have also placed themselves in a position to give Allis-Chalmers Co. close competition in the large machinery.

"Allis-Chalmers Co. did not have these smaller lines, the concern having just recovered from very costly experiences, and I doubt whether they were in a position, financially to do so. The conditions had to be met by retrenchment.

"This involved dropping some of their higher-priced managers and engineers, and practically discontinuing advertising, and recently this economy policy extended to the sales department. The effect has been that their organization has been somewhat weakened, while the forces of their competitors have been correspondingly strengthened.

"Until the retrenchment started, the management was generally considered efficient, the local head of the company having built up an organization of competent, energetic and loyal workers, an organization equal to any in the country.

One Year of Profit

"Prior to that time the company had gone through experiences that would have wrecked any less ably managed concern, but in the year following the panic their annual report showed a substantial profit—an increase of over $1,000,000 over that of the previous year.

"Soon after the consolidation of the Allis-Chalmers companies it was found that the Corliss engine, which had been responsible for the great success of the E. P. Allis Co., had become practically obsolete. The board of directors decided to develop a line of steam turbines, hydraulic turbines, and gas engines. The development of these lines took three to four years during which time several million dollars were expended before any returns could be realized.

"At the same time it was decided to double the capacity of the West Allis plant at an expense of several millions more. When the plant was completed, the company found themselves with a foundry strike on their hands, which continued for several years, and which cost about $1,000,000. Then came the panic of 1907.

"That the Allis-Chalmers Co. lived through all of these troubles seemed to many of us little short of miraculous, and if the company has been mismanaged, as has been intimated, it has been because the formation of such a combination has created problems in management that cannot be solved by the methods laid down by its promoters."

Philadelphia Foundrymen's Association

The Philadelphia Foundrymen's Association held its regular monthly meeting at "The Bartram," 3312 Chestnut street, Wednesday evening, April 3. The paper of the evening was presented by Henry Cave, president of the Autogenous Welding Co., of Springfield, Mass., and of the Davis-Bournonville Co., New York, upon the subject of "Autogenous Welding." Mr. Cave in his paper traced the history of the development of this process, the scientific reasons for its existence, its present uses and the probable future development. He used numerous stereopticon views to illustrate various classes of work that have been carried out and the equipment employed and also conducted a practical demonstration of the welding of cast iron, steel and aluminum and of the cutting of steel by a jet of oxygen. One new applicant for admission to the association was reported. A change in the meeting place was necessitated this month, owing to the fact that the Manufacturers' club at which the sessions have customarily been held, is now being torn down to clear the site for a new club house.

List of Boiler Manufacturers

At the twenty-fourth annual convention of the American Boiler Manufacturers' Association, the secretary of the Supplymen's Association was authorized to publish a list of the boiler manufacturers in the United States and Canada. This list comprises 1,000 names of boiler manufacturers in the United States and Canada, which have been verified through mercantile agencies, and by direct correspondence, and will be of interest to manufacturers of tools used in boiler shops, material men, mechanical engineers and boiler buyers. The book is also arranged with a column in which the credit rating and financial responsibility can be inserted. Price per copy $5. Apply, F. B. Slocum, secretary, Supplymen's Association, care Continental Iron Works, West and Calyer streets, Brooklyn, N. Y.

The Ohio Crucible Steel Co., Cleveland, has changed its name to the Atlas Steel Foundry Co.

INTERESTING FACTS

Connected With Subsidiaries of the United States Steel Corporation.

Several letters written by Chairman E. H. Gary to J. P. Morgan & Co., the underwriters, in connection with the recent issue of $30,500,000 bonds of subsidiary interests of the United States Steel Corporation, contain some interesting information regarding the properties by which the transaction is secured.

It is announced in this connection that the National Tube Co. is about to increase its capital stock from $9,000,000 to $13,000,000. This is merely an intercompany matter, since the additional $4,000,000 of stock will be bought at par by the Federal Steel Co., the present holder of all the outstanding stock of the tube subsidiary. The proceeds of this stock issue and of the $10,000,000 in bonds of the National Tube Co., which are to be the first mortgage on the Lorain, O., plant of the company, according to Judge Gary will be used in liquidating loans due by the National Tube Co. to United States Steel Corporation and other subsidiary companies of that Corporation for moneys borrowed to pay for actual outlays for additions and extensions and for working capital. The National Tube Co. will thereupon have no floating debt. Its current assets are largely in excess of all its current liabilities.

The Lorain plant, according to the statement, in 1911 produced 571,120 tons of pig iron, 690,816 tons of steel ingots and 466,672 tons of rails, tubing, pipe and other steel products. This output represents about 70 per cent of the normal capacity of the plant.

With respect to the $15,000,000 bond issue of the Indiana Steel Co., which is to be a first mortgage on the Gary plant, Judge Gary states:

The proceeds of the $15,000,000 of bonds will be used in part for future outlays for construction and in part to liquidate advances due by the Indiana Steel Co. to the United States Steel Corporation for moneys borrowed to pay for actual outlays for additions and extensions. The Indiana Steel Co. has no floating debt, except that due to the United States Steel Corporation for construction advances. Its current assets are largely in excess of all its current liabilities other than the aforesaid construction advances.

The output of the Gary plant during the year 1911 was as follows: 707,273 tons of pig iron, 1,036,545 tons of steel ingots and 751,340 tons of rails and sundry other steel products and 811,804 tons of coke. This output represents about 50 per cent of the normal capacity of the completed producing units of the plant.

It is shown that the Illinois Steel Co. operates under lease the Gary plant of the Indiana Steel Co. under terms and conditions whereby the entire net earnings from the property accrue to the Indiana Steel Co.

Considering the intercompany relations from the standpoint of the Illinois Steel Co., as respecting the issue of $5,500,000 debenture of this company, Judge Gary says:

The Illinois Steel Co. also operates under lease the steel plant of the Indiana Steel Co., generally known as the Gary plant of the United States Steel Corporation located at Gary, Ind. The conditions of this lease impose no fixed charge whatsoever upon the Illinois Steel Co., the amount of rental payable being based entirely upon the net receipts obtained by the Illinois Steel Co. from the operation of said plant.

The output of the plants operated by the Illinois Steel Co. during the year 1911 was as follows: 2,283,176 tons of pig iron and other blast furnace products, 2,666,944 tons of steel ingots and 2,066,554 tons of finished steel products of various classes, being about 21 per cent of the aggregate finished steel output in 1911 of all the steel manufacturing companies controlled by the United States Steel Corporation. The output in 1911 of the cement plants owned by the Illinois Steel Co. operated under lease by the Universal Portland Cement Co. (whose stock is owned by the Illinois Steel Co.) was 4,627,500 barrels. The output of the United States Coal & Coke Co. (all of capital stock of which is owned by Illinois Steel Co.) was, in 1911, 2,223,871 tons of coal and 58,697 tons of coke. The output of the Frick Coke Co. in same year (10 per cent of whose stock is owned by the Illinois Steel Co.) was 8,686,008 tons of coke.

The bonds of the Indiana Steel Co. and of the National Tube Co., bearing 5 per cent interest, were offered for subscription at 101¼ and the $5,500,000 of Illinois Steel Co. 4½ per cent debentures at 92¾. The issues, when placed on the market last week by J. P. Morgan & Co., were readily disposed of and were heavily over-subscribed.

Lake Superior Iron Ore Mines

The Oliver Iron Mining Co., mining organization of the United States Steel Corporation, has been granted relief from an injunction which had tied up operations in the Sellers mine, Mesabi range, for some time. A woman had secured an injunction on the ground that the blasting near her property had affected her health. Judges Hughes and Dibell have filed their ruling permitting the resumption of operations at the mine, with a modified restraining order that mining must not be done within certain limits of the woman's property.

Miners in the employ of the United States Steel Corporation in the Marquette district are circulating petitions, which will be forwarded to Washington, asking that the government provide instruction cars for use in rescue work. Following the lead of the Oliver Iron Mining Co., a number of the operators in the Lake Superior district have installed the Dragar apparatus, a safety device resembling a diver's outfit. A number of stations have been established and instruction is being given picked men at each mine, in the operations of the appliance.

The Minnesota Mining & Development Co., which has been drilling for iron the last 11 months on the Mesabi range, has acquired the Alberta mine, at Virginia, Minn. The deal was made by H. G. Fisk, W. N. Barber and W. A. McWatty, officers of the company. The acquisition was made to place the company on a dividend-paying basis the first year of its existence and it is expected the ore will be shipped as soon as navigation opens.

A great many of the miners in the employ of the Cleveland-Cliffs Iron Co. have enrolled in the school of instruction to be started shortly by that company and it is certain that there will be a large class. A competent instructor will be engaged and the men will be taught mining principles that will be of value to them.

Iron ore is reported to have been found 4½ miles northwest of Fort Frances, Ont., a town near International Falls, Minn., on the border line between United States and Canada.

The Messaba-Cuyuna Iron Land Co., Duluth, Minn., has taken a lease on 160 acres in Crow Wing county, Minn., and drillings will probably be started. The land is in the Cuyuna range.

The Oliver Iron Mining Co. is said to be preparing plans for the erection of a new club house at Chisholm, Minn., for the use of its employes. The building, which will cost approximately $15,000, will contain a billiard room, bowling alleys, gymnasium, library and reading rooms, banquet hall and shower baths.

Mine owners on the Cuyuna range, which entered the shipping lists last year, are preparing for a busy season. The Kennedy mine, the only shipper last year, is said to have a stock pile of 80,000 tons. The Armour No. 1 and No. 2 mines are stocking ore and are expected to ship this year. The installation of a 2,000-gallon pump on the 200-foot level at the Inland Steel Co.'s Thompson mine, has been completed.

Stack No. 4 at the North Birmingham, Ala., plant of the Sloss-Sheffield Steel & Iron Co. is to be relined.

EIGHT MILLIONS

Will be Expended by San Francisco on Its Civic Center Building.

San Francisco, April 6.—The voters of San Francisco have voted bonds in the amount of $8,000,000 for the establishment of a civic center and the erection of municipal buildings on a comprehensive scale. About one-half of this amount will be used to acquire the land, and $4,000,000 will be used for the buildings. The work of condemning the land for the project has already started and plans are being drafted for the structures. The steel requirements both in bars and structural material will be extensive, although it is not possible at the present time to give the specifications. The group will consist of a city hall, auditorium, art museum, public library and opera house. The contracts will call for the completion of the entire group before the opening of the Panama Pacific Exposition in 1915.

Plans are being perfected at San Pedro, Cal., for the reorganization of the San Pedro Foundry Co. and the San Pedro Marine Construction Co. into a larger concern, which will handle the ship building business in all of its phases. It is planned, according to officers of the last named company, to build a large dry dock, machine shop, boiler shop and make additions to the present foundry.

Metal Exchange Elects

At the annual election of the New York metal exchange, the following officers were elected: President, James E. Pope; vice president, A. B. Hall; treasurer, Robert L. Crooke; members of the board of managers: B. Hochschild, H. W. Hendricks, G. E. Behr, E. Baerwald, Edwin Groves, W. Parsons Todd, Erich Benjamin, J. H. Lang; arbitration committee: J. Langeloth, C. J. Marsh, E. J. Keane, P. R. Jennings, Humphrey D. Bond. Inspectors of election: C. H. Bolles Jr., Fred Steiner, I. J. Louis.

Closes for Pumps

The Youngstown Sheet & Tube Co., Youngstown, O., has closed with the William Tod Co., Youngstown, for two condensing, cross-compound, crank and fly wheel, pressure pumps, 26 and 54 x 36, with two double-acting plungers, 8 x 36, having a capacity of 1,500 gallons per minute, at 600 pounds pressure per square inch.

Will Soon Finish.—The extensive repair work that has been progressing on the docks of the Chicago & Northwestern railway at Escanaba, Mich., during the winter, will be finished before navigation opens, according to officials of the road. On No. 3 dock, an entirely new top was constructed while No. 6 dock was practically reconstructed from the pockets up. Extensive work is now being done in re-wiring the two docks for night work.

Plans Extensive New Construction

The Western Implement & Motor Co., Davenport, Ia., advises that it has in contemplation the erection of the following factory buildings, to be completed as soon as possible: Main building, 80 x 1,000 feet; foundry, 80 x 500 feet; foundry grinding, shipping and storage room, 80 x 500 feet; blacksmith shop, 60 x 500 feet; machine shop, 80 x 300 feet; paint shop, 80 x 500 feet; two warehouses, each 80 x 500 feet; power plant, 80 x 100 feet; water tower, fuel oil tank and naphtha tank; office building, two stories, 80 x 100 feet. With the exception of the office, all these buildings will be one story, with saw-tooth roofs, of reinforced concrete construction. They will be used for the manufacture of Appleby cotton pickers, creeping grip gasoline and kerosene oil tractors and light farm tractors. The machinery will almost all be of the lighter variety; some heavy machinery, however, will be required for shaping the heavy frame work of the tractors. The Leonard Construction Co., Chicago, is in charge of the plans.

Pushing Construction.—The number of men employed on the construction of the Minnesota Steel Co.'s plant near Duluth, Minn., has been largely increased. The company is a subsidiary of the United States Steel Corporation. Work is progressing with a view of placing the first unit in readiness for operation as quickly as possible. The erection of the steel upon the foundations of the two blast furnaces is nearly up and masons are engaged in laying the blocks for enclosing the open hearth furnaces.

The Princess Furnace Co., operating a stack at Glen Wilton, Va., set a record for output in March, when 2,564 tons of Princess iron were made. This is considerably better than the furnace has ever before done.

Radford Crane furnace of the Virginia Iron, Coal & Coke Co. blew out March 9, for relining. Foster Falls stack of the same concern went out on March 11.

EXTENSIVE PLANS

For Improving Railroad Conditions at Detroit—Only One Removal.

Detroit, April 9.—While there has been an abundance of discussion regarding the freight situation in Detroit and the possibility of manufacturing plants being removed to other cities on the alleged ground that they would obtain better freight service there, investigation shows only one company which really intends to move away, that being the Chamberlain Weather Strip Co., which will open a new plant at Peru, Ill., maintaining its Detroit offices, however, and some of the plant here. The Peru location would place that company in closer contact with its supply of raw material—zinc—and that is given as the main reason for the change, rather than freight troubles.

At first the cause of the trouble was laid to the congestion at Toledo, and the board of commerce, as well as the state railroad commission, sent representatives to Toledo to look over the situation. The Buick company, of Flint, and many Detroit manufacturers sent men to Toledo to personally see that their cars were hurried towards Detroit, bearing coal and raw material.

Then an investigation in Detroit followed and it was found that the Detroit manufacturers had contributed largely to the congestion because they had made little or no provision for their own needs in the way of private tracks, but depended entirely on the railroads. Those plants which were equipped with private tracks suffered far less, it is claimed, than the others.

However, while the discovery that the business interests have been negligent in that regard, has given some indication of the direction the remedy will have to take, the carriers have come to the front with plans for the expenditure of nearly four million dollars before the first of January, 1913, which would include increased terminal tracks here, new freight houses, and other extensions and betterments.

The development of the plans of the board of commerce transportation bureau for the adjustment of freight troubles contemplates extensive improvements this year, which include new terminal tracks in the northeastern part of the city outside of the city limits, which would take care of 15,000 additional freight cars, and also other belt and terminal lines.

The annual meeting of the United Metal Trades Association of the Pacific Coast will be held at the Multnomah hotel, Portland, Ore., April 19 and 20.

NAMING DELEGATES

To National Business Conference at Washington, April 22.

So favorable are the responses by commercial organizations to the invitation of the secretary of commerce and labor to name delegates to a conference at Washington, D. C., to consider establishing a national association or chamber of commerce, that it has been found necessary to fix the date of this conference on April 22, instead of April 15, as originally planned. The New Willard hotel has been designated as headquarters for the conference, and the meetings will be held at that hotel. To date, 150 organizations have approved of the plan and 80 associations have already appointed delegates, so that it is believed that every state in the union and the insular possessions will be represented. Names of delegates should be transmitted for record to the bureau of manufacturers, department of commerce and labor, Washington, D. C.

It has been suggested that each organization send not more than five delegates; that an advisory committee including one representative from each constituent shall be named, this to choose a nominating committee; and that there shall be a president, two vice presidents, a treasurer, a board of directors of 21 members, and an executive secretary who shall be in charge of permanent headquarters established at Washington.

President Taft, on March 1, signed a statement in which he called attention to his message to congress on Dec. 7 in which he suggested the organization of a central association which should keep in touch with associations and chambers of commerce throughout the country. In his statement he says:

It is not my intention to define the purposes of such an organization, or indeed in any manner to anticipate the scope of the discussions upon which such delegates may conclude to enter; but it appears to me to be obvious that such an organization must be instrumental in a very large field to aid and assist the executive and legislative branches of government in an intelligent and impartial development of domestic and foreign trade.

It is interesting in this connection to point out that Commissioner Robert Wuest of the National Metal Trades Association in his report to that organization's convention last April, advised "the formation of an American Federation of Employers to be composed of representatives of all organizations similar to our own, of which I understand there are in the neighborhood of 364 in existence today. The maintenance cost of such an organization would be insignificant when compared with the substantial benefits to be derived."

Has Addition Now Under Construction

The New Britain Machine Co., New Britain, Conn., advises that it has under construction an addition which will increase the length of the main factory building by 165 feet. The addition will be four stories, 60 feet wide, of structural steel and mill construction. Traveling cranes will be installed on the first three floors. The addition will be used for assembling and testing New Britain automatic multiple spindle chucking machines. These machines were formerly made by Geo. G. Prentice & Co., New Haven, which plant was purchased by the New Britain concern last year. The New Britain company is also erecting a warehouse and store room building, two stories, 40 x 150 feet.

First Launching at New Yards at Ashtabula

The bulk freighter Louis R. Davidson was launched from the Ashtabula, O., yard of the Great Lakes Engineering Works, on Saturday, April 6. It was the yard's initial launching and in fact the first steamer to be launched in Ashtabula in 40 years. The Davidson is building for Boland & Cornelius, of Buffalo, and is 524 feet over all, 504 feet keel, 56 feet beam and 30 feet deep. The launching took place under the auspices of the chamber of commerce of Ashtabula, the chamber giving a dinner to the officials of the ship yard. It was announced at the dinner by President Pessano, of the Great Lakes Engineering Works, that the keels for two steamers for salt water service will be laid at the yard immediately.

Headquarters in Chicago

Announcement has been made that the headquarters of the National Founders' Association will be removed from Detroit to Chicago on May 1.

Superintendent Culkins, of the Chamber of Commerce, Cincinnati, has in his possession a list of buyers in Mexico who are in the market for irrigation machinery and agricultural implements. The list cannot be published, by order of the government, but the names of the buyers will be furnished manufacturers or dealers upon application.

TOO RAPID ADVANCE

In Price of Copper to Denote Merely Normal Recovery.

There have been sales of electrolytic this week at 16 cents, the highest price the metal has sold at since 1907, says the Boston Financial News of April 6. The following table, giving the average prices for electrolytic during the past ten years, will allow of interesting comparisons:

Year—	Price, cents.	Year—	Price, cents.
1902.....	11.97	1907.....	20.86
1903.....	13.62	1908.....	13.39
1904.....	13.11	1909.....	13.11
1905.....	15.98	1910.....	12.88
1906.....	19.78	1911.....	12.55

Shareholders Given Plan of Reorganization

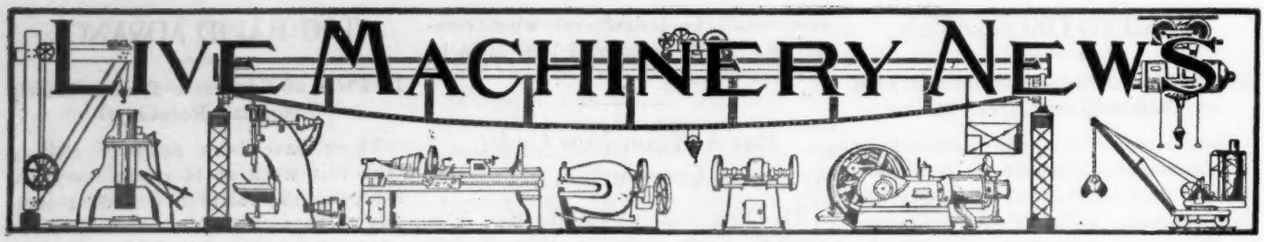
The committee in charge of the organization of the Hall Signal Co. has submitted its plan to the shareholders. It is proposed to form a new company with $6,000,000 capital, half common, $2,000,000 7 per cent cumulative preferred and $1,000,000 20-year bonds. The new company will acquire the property of the Hall Signal Co. subject to its present first mortgage of $250,000. Stockholders may subscribe $100 a share for preferred stock of the new concern to an amount equivalent to 50 per cent of their present holdings. With this they will receive common stock equal to their present holdings.

Two Steamship Contracts

The American Ship Building Co. has secured the contract for building the new passenger steamer for the Northern Navigation Co., amended bids for which were submitted by the ship yards recently. The new steamer will be built at the yard of the Western Dry Dock & Ship Building Co., at Port Arthur, and is promised for delivery in June, 1913. The new steamer will be somewhat larger than the Hamonic, being 385 feet long, 52 feet beam and 28 feet 9 inches deep.

The American Ship Building Co. was also the lowest bidder for the construction of a proposed steel fire tug for the city of Cleveland.

The J. W. Frazier Co., Rockefeller building, Cleveland, will be in the market shortly for cast iron pipe, probably 4 and 6-inch; two 50,000-gallon water tanks; one 100,000-gallon water tower; hydrants, fittings, etc. It will also take bids on the construction of a reservoir, dam and a 100,000-gallon filter plant.



In New York, the volume of new inquiry is encouraging, the most important single inquiry being for about $60,000 worth of miscellaneous machine tools, for the Safety Car Heating & Lighting Co. Definite orders have been placed for a large portion of the equipment for the Jersey City, N. J., technical high school. The remainder of that list will be contracted for during the next few days. In Pittsburgh the market shows further improvement. New inquiries continue to come out and a fair volume of business is being booked. Prices in machinery lines average higher in Pittsburgh. In Cleveland, the machine tool market has quieted down during the past week. In Chicago and other western markets, the trade in machine tools has shown some expansion recently; dealers report a steady run of small orders, but a lack of business of unusual proportions.

Machine Tools

Joseph Mobley, Elizabethtown, Ky., has entered the automobile business, and will probably be in the market for machine tools for a repair shop.

The Combination Planter & Cultivator Co., W. M. Reynolds, Hattiesburg, Miss., is in the market for a power punch and also shear that will work ⅜ x 2-inch iron.

The New York office of Hill, Clark & Co., Boston, received the order for 30 engine lathes, 10 bench lathes, and a boring mill, included in the list of machine tools put out late in February by the board of education of Jersey City, N. J., for the Technical High school of that place.

The Michigan Press Co., Ypsilanti, Mich., is having plans prepared for an extensive addition to its plant, which will more than double its present capacity. The new building will be 70 x 170 feet and will be of concrete construction. It will be used as a machine shop. A 30-ton traveling crane will be installed and considerable machine tools equipment will be needed.

The Harley-Davidson Motor Co., Milwaukee, is scheduling a list of new machine tools and equipment, which will be needed for its addition, now being constructed at a cost of $125,000. It is understood that contracts for the equipment will be placed not later than July 1. The addition, which will double the size and capacity of the motorcycle works, is to be ready for occupancy about Oct. 1.

Inquiries aggregating in value about $60,000 have been put out by the Safety Car Heating & Lighting Co., 2 Rector street, New York, for machine tool equipment for an addition to its plant in Jersey City, N. J. The contract has been let for the building, which will be a reinforced concrete structure. The company has been at work on the equipment specifications for several months, and it is believed that the matter is now in shape to close very shortly.

Power Plant Equipment

The trustees of Roseville, Cal., will receive bids for a new municipal electric distributing plant on April 29.

The Climax Roller Mills Co., Shelbyville, Ky., is in the market for an engine, about 75-horsepower capacity.

The Des Moine City Railway Co., Des Moines, Ia., has appropriated $95,584 for new power plant equipment. J. E. Ralston is superintendent.

The Dorris Motor Car Co., St. Louis, it is understood, will build a power plant to cost $7,200, at Sarah street and Laclede avenue.

The Pawtucket Power & Electric Co. has placed an order for the structural material for a powerhouse to be erected at Pawtucket, R. I.

Yazoo City, Miss., will receive bids until April 27 for the installation of equipment in its new electric light plant. Address the public service commissioners.

The Home Lighting Co., Red Oak, Ia., has been incorporated by Thomas D. Murphy, H. E. Deemer and others with a capital of $10,000. The construction of a small plant is proposed.

Henderson, Ky., may install additional machinery in its lighting plant, owing to the fact that arrangements have been made to supply power to the Henderson Traction Co. Superintendent Hite is in charge.

The West Virginia Power & Transmission Co., incorporated in West Virginia, is preparing to construct a dam across the Cheat river, and erect an extensive hydro-electric power plant for the distribution of power in that section. The company is a subsidiary of the West Penn Railways Co., Uniontown, Pa.

The Kentucky Public Service Co., Louisville, is making a number of improvements in the plant of the Bowling Green Gas & Electric Co., which it recently acquired, together with other Kentucky public utility properties. A 1,000-horsepower turbo-generator has been ordered for the power plant, and other equipment will be bought.

The Penn Public Service Co., Johnstown, Pa., has purchased the property and franchises of 18 electric light, heat and power companies, scattered through Clearfield and Centre counties, and will develop these local companies and centralize power plants wherever possible. The company has increased its capital stock from $16,000 to $300,000.

An electric railroad will be built from Gallatin, Tenn., to Lexington, Ky., by the Cumberland Valley & Interstate Electric Railway Co., which has been incorporated at Gallatin with $50,000 capital stock by Harris Brown, Gallatin; M. L. Wright, Hartsville, W. Y. Allen, Gallatin, and others. An arrangement is to be made to connect with the lines of the Central Kentucky Traction Co. at Lexington.

New Construction

The Reading Transit Co., Reading, Pa., is planning to build a car barn and repair shop, 350 x 1,500 feet.

The National Machinery Co., Tiffin, O., contemplates the erection of a three-story addition.

March & Henthorn contemplate the erection of a new foundry and machine shops at Belleville, Ont.

The Hygeia Filter Co., Detroit, has awarded contracts for an extensive factory building.

The Pope Mfg. Co. is planning to build a four-story addition to its Hartford, Conn., works.

The Aultman & Taylor Machinery

Co., Mansfield, O., has plans for a new steel building.

The Joliet Bridge & Iron Co., Joliet, Ill., has begun the erection of a pattern shop, 40 x 100 feet, for which new machinery is being purchased.

The American Numbering Machine Co., 291 Essex street, Brooklyn, N. Y., has taken bids on a two-story, 38 x 90-foot manufacturing building.

The Alvey-Ferguson Co., Oakley, Cincinnati, is planning to build a three-story and basement addition, 80 x 180 feet.

The Home Stove Works, Eighteenth place and Rockwell street, Chicago, is preparing plans for a new warehouse, pattern shop, foundry, etc.

E. J. Hoffman, Manitowoc, Wis., is negotiating with business men at Fond du Lac, Wis., with regard to establishing a foundry.

The American Brass & Metal Works, 82 Washington avenue, Detroit, is about to take bids on a one-story, 40 x 150-foot addition.

The Lauth-Juergens Motor Car Co., Gibsonburg, O., is preparing plans for a one-story brick and steel factory addition to be erected this spring.

The Ann Arbor railroad has announced that it will build shops at Detroit this summer. The plant will cost about $400,000.

The New Holland Machine Co., Lancaster county, Pa., has increased its capital from $50,000 to $75,000, to provide for an extension to its plant.

The Pittsburgh Steel Foundry Co., Glassport, Pa., is extending its core room, and will order additional machinery.

The Kales-Haskel Co., Detroit, manufacturer of sheet metal specialties, contemplates the erection of extensive additions to its plant.

The United States Steel Tie Co. recently chartered, will build a plant for the manufacture of steel ties, it is understood, in the immediate vicinity of Pittsburgh.

The Pennsylvania Co. has awarded a contract to the Dawson Construction Co., Pittsburgh, for a brick and fireproof planing mill and pattern shop, to be erected at Columbus, O.

The Duff Mfg. Co., Northside, Pittsburgh, manufacturer of jacks, advises that it will not make any decisions regarding the erection of new buildings before another month.

Rogers Bros., machinists, Pittsburgh, are building a new machine shop in Leadsdale street, Northside, and expect to occupy the same about July 1.

The Risdon Tool & Machine Co., Waterbury, Conn., in reference to a report that it would move to Naugatuck, advises that no definite plans have yet been made.

The Gray & Dudley Hardware Co., Nashville, Tenn., is reported to be contemplating an enlargement of its factory. It has secured a large site adjoining its present plant.

The plant of the Empire State Metal & Wheel Co., Ft. Plains, N. Y., may be removed to Nashville, Tenn. Lewis A. Dunkel is negotiating with Nashville interests to this end.

It is reported that the Bradley Axe Co., a Waterbury, Conn., industry, will shortly announce plans for a manufacturing plant which will be erected at Richard and Brown streets, Brooklyn, N. Y.

The Westinghouse Electric & Mfg. Co. is building a reinforced concrete warehouse in connection with its East Pittsburgh works for the storage of oil used in the manufacture of transformers.

The Pittsburgh Tile Roofing Co. with E. O. Lippincott as president, is preparing plans for a new plant to cost $25,000, to be erected at East Liverpool, O. The company will buy considerable equipment.

The Chamberlain Metal Weather Strip Co., whose main office and plant have been in Detroit, has publicly announced that it will establish its principal factory at Peru, Ill. The company's plant was badly damaged by fire recently.

The New Process Rawhide Co., Syracuse, N. Y., will erect a four-story addition, 66 x 125 feet, and will raise a portion of its present plant from two stories to four stories. The company's capacity will be approximately doubled.

The Goeller Iron Works, Newark, N. J., advises that its new structural shop is 100 x 200 feet and is equipped for handling light structural work. No new machinery is required at present, but a few traveling cranes will be required later.

The Stevens-Duryea Co., Chicopee Falls, Mass., which recently purchased 40 acres at East Springfield, Mass., expects to have the first building on the new site ready for occupancy by June 1. It will be of mill construction, four stories, 80 x 500 feet.

The Cook Iron Co. has taken out a permit for a three-story building in St. Paul street, near Andrews street, Rochester, N. Y. The estimated cost is $40,000. The building will be 66 feet wide, 155 feet deep and 40 feet in height.

The William Steel & Sons Co. has begun work on a one-story machine shop, 125 x 213 feet, and a one-story boiler house, 26 x 54 feet, at Lehigh and Sedgley avenues, Pittsburgh, for the C. H. Wheeler Mfg. Co. The plants will cost $65,000.

Plans have been drawn and contracts awarded by the Janesville Machine Co., Janesville, Wis., for the construction of a two-story plow shop, 143 x 143 feet, of fireproof construction. Work will begin about June 1.

B. C. Seaton, Nashville, Tenn., reports that he has practically completed the organization of the American Wheel Co., which is to manufacture a patented automobile wheel. Operations will be begun in the near future.

The National Screw & Tack Co., Cleveland, has taken out a building permit for the erection of a six-story building, to contain about 2,000 square feet of floor space per story. It will be used mainly for warehouse purposes and manufacturing.

R. H. Marr, 1529 Ford building, Detroit, is preparing plans for a reinforced concrete factory, one-story high, 40 x 150 feet, for the American Brass & Metal Works, 82 Washington avenue, Detroit. The estimated cost of the plant is $25,000.

The Ohio Steel Foundry Co., Lima, O., advises that it will erect a pattern storage building, 60 x 200 feet. It does not expect to install any new machinery in same. It is now increasing its core room capacity 50 per cent by means of additional core ovens, jarring machines, etc., which have already been purchased.

The Pacific Tin Plate Co., it is said, has under consideration the purchase of a large plot of property at Youngstown, Wash. The proposed site would be used for the erection of a plant to manufacture plates, cans, etc., to an estimated cost of $3,000,000, according to the report.

The American Steel-Copper Appliance Co., with temporary offices in the Union Bank building, Pittsburgh, is preparing plans for a plant at Trout Island near Sharpsville, Pa., which will cost $150,000. The company is developing new processes for welding steel and copper and other metals.

The Neuman's Automatic Mfg. Co. has been organized at Ashland, Wis., to manufacture and market automatic switches and grips used in connection with coal and ore dock machinery, tramways, hoists, cranes, etc. It is intended to establish a factory at Ashland during the summer.

The J. I. Case Threshing Machine Co., Racine, Wis., has commenced operations on the construction of a new central power, heating and lighting plant, to cost $75,000. Extensive additions to the motor car and motor

works at Lakeside, Racine, are contemplated.

The John Hoberg Co., paper manufacturer, Green Bay, Wis., is establishing a complete machine shop as auxiliary to its works. A large list of tools has already been purchased, but orders are now being placed for additional equipment. Frank H. Hoberg is general manager.

The Warner Instrument Co., Beloit, Wis., is about to award contracts for the construction of an addition to cost $50,000. The building will be 100 x 100 feet, of reinforced concrete and brick construction. It will be used for the enlargement of the automobile speedometer department.

The Abbott Ball Co., Hartford, Conn., advises that it has let contracts and commenced construction on an addition, two stories, 40 x 100 feet, of brick, steel and concrete construction. It will be used for manufacturing steel balls for burnishing metal goods by tumbling, also for making burnishing barrels.

The Meilink Mfg. Co., Toledo, O., advises that it is about to erect a new factory building which will contain approximately 60,000 square feet of floor space. It will be used for manufacturing various house, wall and office safes, and a line of metal specialties. Specifications for the required machinery have not yet been decided on.

The Cliff Williams Machine Co., Meridian, Miss., which recently lost its plant by fire, advises that it is erecting a machine shop, 75 x 225 feet, and a brick wagon factory, 75 x 250 feet. The concern wishes to buy the machinery of some wagon factory and machine shop which has failed.

The Transue & Williams Co., Alliance, O., whose plant was recently damaged by fire, advises that contracts have been let for two buildings, one 60 x 400 feet, and the other 60 x 275 feet. The buildings will be fireproof in every particular, no wood or combustible material being used in the construction of either structure.

In THE IRON TRADE REVIEW of April 4, it was erroneously reported that George W. Graves, 56 Rowland building, Detroit, is preparing plans for a one-story power house, and a one-story foundry, the latter 80 x 100 feet, for the Murphy Iron Works, Detroit. These plans include a foundry, 100 x 270 feet, and do not provide for a power house.

The Warner Instrument Co., of Beloit, Wis., manufacturing speed indicating and mileage recording devices, is about to award contracts for the construction of a large addition, 100 x 100 feet, to be devoted to the manufacture of the Warner auto-meter. The company recently closed a contract with the Cadillac Motor Car Co. to supply 15,000 auto-meters.

Robert Scott & Son, Ltd., Galt, Ont., will build a plant on the River Park survey. Contracts have been let for four buildings, which with the sheds, will comprise the Victoria wheel works plants. The buildings will have the following dimensions: 100 x 230; 30 x 230; 100 x 100, and 40 x 50 feet, of stone, brick and glass. The staff will be increased 50 per cent when the buildings are occupied, which is expected to be about July 1.

The Deyo-Macey Engine Co., Binghamton, N. Y., has leased the site of the old roundhouse, repair house and incidental buildings of the D. & H. railroad in that city for a term of years, and the old buildings have been purchased outright. They will be torn down and used in the construction of those which the Engine company will erect. It is proposed to start the work at once. The first building will be of brick, into which a portion of the firm's business will be moved as soon as it is convenient.

The McGregor & McIntyre Co. is commencing the erection of a structural steel plant on Shaw street, Toronto. The foundations will be laid for a building 140 x 400 feet. The mill machinery will be installed on the foundations before the building is erected, and the machines will fabricate the steel for the building which will then be put up around the plant. It is stated that this plan has never before been attempted. The company expects to move into the new establishment by fall. It will have about four times the capacity of the present works.

Miscellaneous

The Baltimore & Ohio railroad is preparing to build a plant at Green Springs, W. Va., for creosoting ties.

The Helen Brick Mfg. Co. has awarded a contract to H. L. Jorbin. Columbus, O., for the erection of a mammoth brick plant. The company was recently incorporated and has secured a large tract of clay land, which it will develop. J. M. Helm is president, L. D. Fridman secretary.

The Lacolle Coal Mining Co., Greensburg, Pa., with mines on the Pennsylvania railroad near Bolivar, has awarded contracts for 7,000 feet of railroad track and for a new steel tipple, together with an electric power plant and other machinery. Offutt & Bennett, Greensburg, have the general contract.

The Pennsylvania Coal & Supply Co., Milwaukee, has purchased 10 acres on the water front at Milwaukee for a new yard. Contracts for the erection of the dock equipment have not yet been awarded. The equipment will cost about $125,000. The company recently increased its capital stock from $750,000 to $1,000,000.

The Turkey Foot Lumer Co., Huntington, W. Va., which was recently organized, will build a railroad from Beattyville, Ky., into Jackson county for the purpose of developing a 50,000-acre tract of oak and poplar timber. C. L. Ritter is president of the company, which will erect saw mills along Sturgeon creek for the manufacture of the timber.

Logemann Bros., Milwaukee, recently sold three heavy scrap baling presses to the Rome Brass & Copper Co. and an additional machine of the same type to the Rome Mfg. Co., Rome, N. Y. Other sales reported are to the Canadian General Electric Co., the National Stamping & Enameling Co., Granite City, Ill., and the Wheeling Corrugating Co., Martins Ferry, O.

Bids are asked by the board of trustees of the state hospital for the insane, at Warren, Pa., for the construction of a sewer system and sewage disposal plant at that place, including a receiving well, pump house, two motor-driven centrifugal pumps, 3,850 feet of cast iron force main, settling tanks, sprinkling filter and chemical house. Bids are called for April 12 by S. W. Waters, secretary of the board.

C. J. Farrar, representing Pittsburgh coal interests, has closed a deal for the purchase of the old Shores site mill property of the Barker & Stewart Lumber Co. at Ashland, Wis., from the Weyerhaeuser Co., and will superintend the establishment of a coal dock, the equipment of which will cost approximately $250,000. The dock will be patterned after the electrically-operated docks of the Carnegie Coal Co. at Duluth and Superior, Wis. Work will commence about May 1.

The American Steam Pump Co., Battle Creek, Mich., has furnished all of the pumps for the new McAlpin hotel, in New York. The equipment included two 22 and 38 x 20 x 24-inch and one 14 and 22 x 12 x 20-inch elevator pumps; two 10 x 8-inch and one 4 x 12-inch Marsh air compressors; three 12 x 8 x 12-inch boiler feed pumps; two 6 x 4 x 12-inch tank pumps, together with nine other pumps for distributing water, brine, etc., throughout the building. This company has also recently been awarded a contract for supplying all the pumps in the new Chicago, Burlington & Quincy railway office building in Chicago.

New Buyers

(In order to assist the post office in delivering letters to new concerns, it is suggested that the names of incorporators be written in the lower left hand part of every envelope addressed to such new companies.)

The following manufacturing concerns have filed articles of incorporation:

Donath Valve-Gear Co., Windsor, Mo.; $10,000; by O. A. Donath, John Bowen, F. M. Phenix, and others.

Waynesburg Tin Plate Co., Waynesburg, Pa.; $100,000; by J. W. Closser, C. L. Cochran, W. R. Hawkins.

The Western Boiler & Steel Co., Los Angeles; $50,000; by directors, E. A. MacGillwray, G. W. Darby, D. M. Ward, C. F. Tape and Evan Davis.

Dayton Iron & Steel Co., Dayton, O.; $50,000; by William Dennick, J. R. Muldoon, T. E. Howell, G. Russell Wells, Robert M. Pine.

Almyra Machine Works, Almyra, Ark.; $10,000; by president, E. C. Catts; vice president, C. C. Woods; secretary-treasurer, E. P. Edwards.

The Charles E. Stamp Co., Cleveland; $15,000; machinery and accessories; by C. E. Stamp, H. B. Gay, J. C. Royon, M. G. Gorton, Phelphs Crum.

Victor Automobile Co., Evansville, Ind.; $8,000; to manufacture auto parts; by P. B., W. E. and J. F. Fellwock and H. F. Nolte.

Pittsburgh Nail & Wire Co., Harrisburg, Pa.; $10,000; by Scott S. Leidy, W. Grant Rauch, Harry J. Hanshaw, all of Harrisburg.

Erie Saw Co., Erie, Pa.; $25,000; to manufacture butchers' and grocers' supplies; by W. C. Kreamer, Neilsen Streuber, Louis Streuber, all of Erie.

Anthracite Iron Works, Scranton, Pa.; $10,000; manufacture of iron or steel or both, or any other metal; by George F. Becker, Howard E. Becker, Max F. Henkelman, all of Scranton, Pa.

The Peet Machine Co., Cleveland; $10,000; to manufacture machinery, tools, dies, automobile parts; by A. J. Peet, C. J. Robison, S. T. Peet, I. F. Allen and B. V. Selby.

Acme Twist Drill Co., Newark, N. J.; $300,000; to manufacture high speed drills; by J. W. Ebbs, Englewood Cliffs; A. A. Kelley, Montclair, N. J., and R. H. Waddell, New York City.

International Lead Refining Co., East Chicago, Ind.; $500,000; smelters; by directors, W. D. Thornton, A. C. Clark, J. M. Allen, Tobias Wolfson and W. S. Harper.

The Standard Engineering Works Co., Woonsocket, R. I.; $100,000; to manufacture machinery; by L. W. Campbell, G. F. Roussean, Woonsocket, and A. A. Janckes, Pawtucket.

The Springfield Alberta Co., Hartford, Conn.; $70,000; to manufacture machines and tools; by C. L. Spencer, Suffield; S. C. Dunham, H. L. Stearns, and W. N. Thompson, Hartford.

The Swiss Magneto Co., Buffalo; $250,000; to manufacture magnetos and ignition apparatus; by H. S. Martin, Dunkirk; B. H. Phillips and E. C. Schlenker, Buffalo.

Indianapolis Metal Products Co., Indianapolis; $30,000; to manufacture castings; by directors, Frank Thomson, Ivan Ellis, L. B. Solgrove and Frank Woll Sr.

Apple Electric Co., Dayton, O.; $300,000; manufacturing and dealing in electrical equipment; by V. G. Apple, Oscar Apple, J. C. Slager, Clarence Kiefer and Carl L. Baumann.

The Lewis File Co., Beach City, O.; $10,000; general machine shop; by David D. Lewis, Ella Lewis, Wesley M. Siefer, Otto E. Oberlin, Elmer S. Currant and James F. Hay.

The J. M. Wikel Engineering Co., Cincinnati; $50,000; power, heating, lighting and ventilating machinery; by J. M. Wikel, C. Fogelsong, Lee West, C. T. Hughes and N. E. Bachman.

Lafayette Motor Car Co., Easton, Pa.; $30,000; manufacturing and dealing in motor cars; by R. N. Fulton, R. W. Bowlby, F. C. Rockafellow, all of Easton.

Charles Du Bose Iron Co., Birmingham, Ala.; $2,000; by president, J. B. Knight Jr., Columbus, Ga.; manager, Charles Du Bose, Birmingham; vice president-secretary, E. J. Knight, Columbus, Ga.

The Ft. Henry Mining Co., Cleveland; $800,000; refining, smelting and manufacturing; by William Wisner White, T. H. Garry, Luther Day, Robert C. McCreary and James McSweeney.

Control Mfg. Co., Albany, N. Y.; $100,000 to manufacture metal castings, etc.; by William J. Kerwin, 337 State street; Edward T. Newcomb, 86 South Swan street; Joseph P. Coughlin, 42 North Allen street, all of Albany, N. Y.

Kanawha Engineering Co., Charleston, W. Va.; $5,000; to manufacture machinery; by Thos. J. Carmack, E. M. Scaggs, M. J. Carmack, J. E. Scaggs and Theresa J. Carmack, Charleston, W. Va.

H. Mueller Mfg. Co., Ltd., Sarnia; capital, $300,000; to manufacture water works, gas works, plumbing and steam supplies; provisional directors, Oscar B. Mueller, Philip S. Robinson, Johnston MacAdams and others.

The Cleveland Gas Floor Furnace Co., Cleveland, $15,000; to manufacture gas furnaces, stoves, lighting apparatus, etc.; by J. T. Kelley, S. M. White, J. D. Kelley, J. E. Killian and J. E. Kewley.

Martic Iron Mines Co., Marticville, Lancaster county, Pa.; $5,000; mining, milling, smelting or treating all kinds of iron ore, etc.; by J. Disbrow Baker, Cynwyd, Pa.; Frank A. Kuntz, Camden, N. J.; Joseph P. Murray, Philadelphia.

Swanton Mfg. Co., Swanton, O.; $5,000; to manufacture metal tanks, troughs, poultry fountains, incubators, eaves trough, etc.; by Christopher Gleckler, Charles C. Schell, William Knierim, William Melcher and Pearle Gleckler.

Architectural Bronze Co., Pittsburgh; $10,000; buying, selling bronzes of all kinds; by Robert W. Grange Jr., 4716 Bayard street, Pittsburgh; Robert E. Parish, Shenandoah, Pa.; Frank W. Siver, 1235 Palo Alto street, Northside, Pittsburgh.

Bergdoll Machine Co., Philadelphia; $100,000; to manufacture machinery, motors, machinery supplies and specialties; by Louis J. Bergdoll, 2205 Green street; E. L. Webster, 1400 Vine street; Edwin R. Bergdoll, 929 North Twenty-ninth street, all of Philadelphia.

The Smith & Durkee Diamond Drilling Co., Ltd., Sudbury, Ont.; capital, $40,000; to manufacture diamond drills and contract for diamond drill work; provisional directors, Oscar R. Smith, Chester A. Durkee and Elias T. Lansdowne.

Slentz Mfg. Co., Pittsburgh; $5,000; to manufacture machinery; by Edmund P. Slentz, Sycamore steet, Oak Station, Allegheny county, Pa.; Fred-

erick G. Thiasz, 2 Fremont avenue, Pittsburgh, Alfred J. Rogers, 161 Saranac avenue, Pittsburgh.

Smith-Ryan Boat & Engine Co., New York City; $250,000; to manufacture motors, engines, etc.; by Clarence B. Campbell, 51 Chambers street; Thomas J. Tracey, 1133 Broadway; Michael J. McMullen, 1 Madison avenue, all of New York City.

H. A. May Foundry Co., Philadelphia; $5,000; to manufacture castings, forging tools, machinery from iron or steel; by Wm. A. Tees, 4127 Cambridge street; M. F. Carr, 2534 North Twelfth street; T. H. Beckett, 26 North Seventh street, all of Philadelphia.

C. B. Porter Co., Philadelphia; $225,000; to manufacture tinware of all kinds, tin cans, sheet metal goods, etc.; by Charles A. Porter, 1612 North Broad street; Amanda A. Porter, 1612 North Broad street; Harvey J. Florey, 3132 North Seventh street; William J. Develin, Oak Lane, all of Philadelphia.

Power Plant Engineering Co., Philadelphia; $5,000; to manufacture machinery; by Frank H. Bates, 5014 Franklin street; Edward S. Jackson, 105 West Upsal street; Arthur C. Jackson, Orthodox street and Asylum Pike; Meredith Hanna, 2414 Spruce street, all of Philadelphia.

General Industrial

A certificate of dissolution has been filed by the Greer Iron Works, Greer, S. C.

The Keystone Tube Works, Connellsville, Pa., announces that it is not prepared at this time to give out anything definite in relation to the nature of the square tubing product which it intends to manufacture.

The Canton Brass & Machine Co., Canton, O., advises that its foundry, which was recently damaged by fire, has been rebuilt and that it was occupied on April 1. The foundry equipment, practically destroyed, has been replaced with modern equipment, including sand blast, etc.

The U. S. Pressed Steel Co., Ypsilanti, Mich., advises that its recent increase of capital was made to take care of greatly increased business. The company has erected a warehouse and has ordered and partly installed six new presses which will triple its capacity of whiffletrees.

F. M. Bowman, secretary; Wayne Rawley, manager of structural works, and A. Bovard, engineer, of the Riter-Conley Mfg. Co., Pittsburgh, have resigned their positions and are organizing a large manufacturing concern in conjunction with the Blaw Steel Centering Co., Pittsburgh.

In reference to the construction of its proposed new plant, the Little Giant Stump Puller Co., Hattiesburg, Miss., advises that it has not yet decided as to the size of the building, the details of the equipment or when work will be commenced. It is having its machine parts made in local shops for the present.

The Union Iron Works, San Francisco, has been awarded the contract for a new steel steamer to be built for Eschen & Minor. The craft will be 240 feet in length and 42 feet beam, will be equipped with triple-expansion engines capable of 10½ knots and the Union Iron Works new high pressure oil-firing apparatus.

Shipments of steel have been coming in steadily to the Noelke-Richards Co., Greensburg, Pa., and upon the assembling of all materials necessary, the plant will be started. This will be early this month. Work on three contracts which it has will be sufficient alone to keep the plant busy for many months.

The Federal Steel Foundry Co., Chester, Pa., has secured the contract to make all the steel castings used in the construction of two battleships being built, one of them in the New York Ship Building Co.'s yard, Camden, N. J., and the other in Fore River, Mass. From 600 to 700 tons of castings will be used in each warcraft.

The Browning Steam Shovel Co., recently incorporated under the laws of Ohio, will take over the business and plant of the Browning Mfg. Co., Mansfield, O., and will continue the manufacture of steam shovels, buckets and drag line excavators. No officers have yet been elected. Victor R. Browning will handle the company's business at 542 Rockefeller building, Cleveland.

The E. L. Essley Machinery Co., Chicago, in regard to a recent fire, advises that most of its offices were destroyed, the plant building completely destroyed and the machinery badly damaged. The loss is pretty well covered with insurance and it is expected to make an adjustment soon. The company moved to its well-stocked warehouse at 817-825 Washington boulevard, four blocks west of its store, where it has 13,500 square feet of floor space. The company's business was not interrupted.

Trade Notes

The N. & G. Taylor Co., Cumberland, Md., manufacturer of the "Target and Arrow" brand of roofing tin, has begun the publication of a monthly house organ entitled "Roofing Tin."

The Watson-Stillman Co., New York City, recently adopted the Vanadium Metals Co.'s Victor vanadium bronze for use in its heavy hydraulic machinery.

The Deforest Sheet & Tin Plate Co., Niles, O., announces that its Chicago office has been moved from 838 to 411 First National Bank building, Chicago. W. H Meyst is district sales agent.

The Champion Rivet Co., Cleveland, has announced the appointment of The Corby Supply Co., J. B. Corby, president, 1822-24 Locust street, St. Louis, as its direct St. Louis and southwestern agents.

The American Steel & Wire Co. has established a warehouse at the foot of First street, Detroit, in order to have a supply of products on hand. The offices will be moved from the Ford building to the new location.

Announcement is made that T. H. Speddy & Co., representing the Cambria Steel Co., have opened an office for the sale of Cambria Steel products at 506 I. W. Hellman building, Los Angeles, Cal.

S. W. West & Co., 56 Wade building, Cleveland, advise that they are now handling the complete line of baling presses manufactured by Logemann Bros. Co., Milwaukee. These include varieties which are suitable for every purpose and may be operated by hand, belt, electric or hydraulic power.

H. Koppers Co. has succeeded to the business of H. Koppers, Joliet, Ill., and will very soon have its general offices on the thirteenth floor of the Mallers building, 5 Wabash avenue, Chicago. Definite announcement of the date of removal will be made later. Louis Wilputte, formerly connected with the business of H. Koppers, is not with the new organization.

Fires

Fire damaged the machine and blacksmith shops of the Butte & London mine, northwest of Meaderville, Mont., on the night of March 29. The loss is estimated at $5,000.

Machinery and patterns were lost in a fire which recently visited the plant of the Philadelphia Steel & Wire Co., at Camden, N. J. The loss is estimated at $50,000.

The P. B. Cook Foundry Co., Elkins, W. Va., suffered a loss of $5,000 last week by a fire which badly damaged the building and also an adjoining building occupied by the Maier Supply Co.

Fire damaged the spike mill of the Illinois Steel Co., at Joliet, Ill., on March 31. The structure, an old one, was to have been torn down in the near future. A large fireproof building will replace it.